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ADDRESS AND MEMORIAL

In Opposition

TO THE BILL

(S. No. 300 and H. R. No. 1612),

"To Amend the Statutes relating to

PATENTS

And for other purposes."

Read before and adopted by the

CINCINNATI BOARD OF TRADE,

December 18th, 1878.

Geo. H. Knight

CINCINNATI

TIMES BOOK AND JOB PRINTING ESTABLISHMENT.

1879.

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ERRATA.

- Page 14, foot, for “application” read **implication**.
Page 24, third paragraph, for “devised” read **denied**.
Page 24, fourth paragraph, for “criticism” read **criterion**.
Page 58, last paragraph, for “Hoyt” read **Holt**.
Page 68, second paragraph, for “ligitimati” read **legitimate**.

AN ADDRESS

— ON —

Proposed Changes in the Patent Laws,

Delivered by GEO. H. KNIGHT, at a Public Meeting, called by
the Cincinnati Board of Trade, December 18th, 1878.

(ORDERED TO BE PRINTED).

Mr. Chairman and Gentlemen of the Board of Trade :

Notwithstanding the late remarkable development of industrial art and its manifest outgrowth from the protection which the system of patent grants accords to invention; a sentiment more or less inimical to that system has manifested itself in certain bills now before our National Legislature, and known as Senate bill No. 300, and House bill No. 1612. These bills being substantially identical, may be treated as one. In the belief that the sturdy sense of justice inherent in the American people is amenable to the argument of *facts*, a consideration of those recited in the following pages is asked of the public and their representatives in Congress. These facts indicate, it is thought, very conclusively, that the American system of patent grants is right in principle and happy in results—and that the changes now proposed will be in a high degree unjust, mischievous and impolitic.

While the facts cited go to show the impolicy of all such proposed measures as are calculated to embarrass or restrict the rights of patentees, the present remarks are directed more particularly to the 11th Section of the bill, because affording, it is thought, a test question, whose answer will indicate the tenor

of legislation on patents, and because it seems to have received less attention than some other highly objectionable sections, such, for example, as Sections 1st, 2d and 3d, about which the contests before the Committees have mainly waged, if contests they can be called, in which the advocates of the bill have occupied almost the entire time of the Committees.

The bill is a medley of good and bad measures, of which the latter are believed to very mischievously preponderate.

Before a consideration of Section 11 is given, a brief notice will be taken of some of the others:

SECTION 1 is, in effect, a statute of limitation, restricting to four years, after the alleged offense, a right of action in patent causes. This would be most unjust to patentees. Invasions of this class of property are far more difficult to detect than trespasses on land; partly by reason of their more complex character, and partly because of their number, distance, inaccessibility and other causes. In the case of some valuable inventions, the patentee might have to enter a hundred suits at once, if he could find the infringers, *and the money*, where, even now, he is often put to straits to incur the expense of one. His right of selecting, for example, some single infringer of known responsibility, would be practically abolished. Even were the proposed measure just or politic, it would be unnecessary, because a patent carries with it its own peculiar limitation in the brevity of its tenure; while the proviso in this section, which allows stay of proceedings in the ninety-nine suits, presumes that he has at least instituted them, paid attorney and court fees, given bonds, etc. The proposition is a monstrosity, little short of a vital stab at the policy of granting patents, because it would destroy the value of the select few of highly successful patents, the hope of obtaining which has been the goal and inspiration of all modern invention, and which alone justifies the probable risk and certain outlay.

SECTION 2 is, if possible, yet more ill-advised; it bears the mark of the patent pirate throughout. Its somewhat verbose and involved phrases may be sifted down to two propositions, namely:

1. The trespasser shall not be mulcted in damages exceeding payments known to be made by persons regularly licensed, no matter how profitable the piratical use may have been. For

example: A desires to license B to use his (A's) improvement, but B, who is wise in the wisdom of this world, replies, "No, I will let C try the thing; I have small faith in novelties, and none in yours; but, should it prove to answer C's purpose, I may, perchance, conclude to employ it. In that event, however, I shall not await either your leave or license; for, should you prosecute me, I can, at the worst, be charged no more than your accustomed license fee."

2. A proviso in this section enacts that, if no profit to the user can be proven to have accrued from his piratical use of the invention, no damage shall be assessed. This clause manifestly gives the fraudulent user an advantage over the legitimate one. Thus: A hires a horse to go and collect a debt, but does not succeed in making the collection; B uses the same horse clandestinely with the same object and result. The honest user must pay his livery bill, but the thief is free!

Any one familiar with the ways of corporations with inventors may see how sections 3 and 9 may be made instruments of oppression of an indigent patentee. Section 3 permits the Court to dispense with bond or surety, while Section 9 is wholly silent in that respect. It is difficult to conceive of any honest reason for such exceptional liberty. Moreover, Section 9 would seem to be rendered entirely supererogatory by section 10.

Were Section 3 amended by making it obligatory on tribunals to require bond and security, and Sections 1, 2, 9 and 11 utterly erased, it is believed the bill would be in the main beneficial; but it might be made greatly better by a few additional clauses, such as:

(a). A means for enabling the use—under proper safeguards—of the surplus patent fees now accrued, and which may hereafter accrue;—in the preparation of Digests and other appliances for increasing the efficiency of the Machinery of Examination.

(b). An obligation upon the Commissioner to give applications for Re-issue publicity similar to that which obtained in applications for extension, so as to remove at once and forever the *ex parte* taint which now attaches to such procedures.

(c). Permission to the Commissioner to convert, officially printed copies of patents, whether foreign or domestic, into certified copies, at the cost of such copies and of his certificate.

Some of the propositions inimical to the system, compel its defenders to certain very fundamental enquiries, affecting not only this class of franchises, but vested rights of every kind, and, when traced to their corollaries, are found to menace all property, all human culture, all progress, all civilization.

The ill-advised attacks on intellectual property, in its essence, justify, and may necessitate, a comprehensive scope of enquiry, such as would far transcend the usual limit of a congressional memorial.

Suffice it at present to say that it is believed that the verdict of the more enlightened communities in favor of private holdings of "realities" will—in a not distant future—be at least as emphatically pronounced in favor of intellectual property.

THE POLICY OF PATENT GRANTS.

The marvelous instrumentalities by which, in almost every department of industry, the man of our day is enabled to convert, to his use and convenience, the raw materials and wild forces of nature, are well known to have reached their most marked development within comparatively circumscribed limits, both of space and time. These limits have been in a very striking degree conterminous with that system of polity known as patent grants. England, which was the first, and for nearly two centuries, the only nation to adopt the principle of systematic protection of inventors, led off very conspicuously in the march of modern labor-saving improvements, and more recently, our own country, which has for three generations enjoyed a patent code of exceptional liberality, or rather of exceptional *justice* to inventors, *is now confessedly in the van*, her manufactures successfully invading markets that lately counted her among their best customers.

But, in the face of these acknowledged facts, the policy of patents has been assailed on both sides of the Atlantic. Some would even sweep away all laws which recognize property in the products of intellectual labor, while others would so embarrass and abridge them as to make them of little worth. Of these two classes of assailants the last named is by far the more dangerous, because its attacks are more methodical, more per-

sistent, and above all, because they are usually conducted under the mask of friendship for the system. Indeed, these gentlemen are quite favorably disposed toward the law, they are only against its enforcement—that is all.

PROPERTY IN PATENTS.

With the revival of the arts in Europe, after their long medieval slumber, and while as yet most of the soil of England was held either in common or as mere fiefs of the Crown in consideration of military service, a new and important class of property began to receive recognition, although, at first, in a desultory way: this property was neither in land nor in chattels; but in an art. Its systematic, legal definition is now well known to have been seemingly accidental and—like that in land—of recent date; and to have originated in a movement, not to institute new monopolies, but to abolish old ones.

EXPEDIENCY OF PATENT GRANTS.

First under royal grants, and afterward, A. D 1623, systematized and placed under sanction of law, there was created a new kind of property, whereby the man rich in ideas—and possibly in ideas alone—was enabled to compete, in the world's market, with the possessor of land, money, or chattels.

The recognition of public obligation to the creators of arts, while an act of simple justice, was, as events have abundantly demonstrated, in the highest degree beneficial to the community; it was at once right, wise and expedient. At the time of this now celebrated enactment, England occupied but a subordinate position in manufacture. Her chief export was raw wool, which was spun and woven abroad. The encouragement given to ingenuity, both native-born and that which sought her fostering protection from across the channel, very soon brought her to the first rank in manufactures and commerce; a position which she has ever since maintained.

The recognition of the claims and importance of invention, while of quite modern date, is nevertheless eminently proper, resting, as it does, on a higher order of service than can be

alleged as the foundation of title in any mere concrete property, such as land or chattels; because the earth's surface and the raw materials of nature exist already to hand; the tiller of the soil or the feller of the forest does but appropriate existing material; but the originator of a useful invention, or the author of a book or a great work of art, is, in a sense, a creator, and has added absolutely to the world's resources.

The invention seems much more to its originator than any mere chattel property, and to possess a double value in his eyes, as not only the fruit of much labor and privation, but as the offspring of his brain,—a part of himself.

It may be admitted, then, that it is expedient that invention be encouraged, and the only question is how? No plan, ever yet proposed, approaches the conditions of either practicableness or fairness that the policy of patent grants affords, and this is true, in spite of the defects in administration, of a system yet in its infancy. It is impossible that a basis of property so great and novel should enter into transactions without some friction. Time is necessary for the new and imperfectly defined interests created to find their proper and accepted places in the social economy. The authors and, in a greater degree, the users of invention have to be schooled in their respective obligations—the community generally is the great and chief beneficiary, and has the least right to grumble. Let us have patience, and “hasten slowly,” especially as to the adoption of reactionary expedients, and beware of imputing to the system itself, mere faults of administration, from which no branch of the public service is exempt.

Ours is the only country in which the inventor receives some approximately just equivalent for the fees exacted, in the labors of a corps of examiners as to the patentable novelty of his invention, and even the American system has never had fair trial, because Congress, not satisfied with making the system self supporting, extorts, even with the present fees, a revenue from the hard and slender earnings of the ingenious. Were the funds thus retained in the public treasury, permitted to be expended in their legitimate sphere, the community would be immensely the gainer, by the additional assurance of validity of granted patents, in consequence of more careful sifting of appli-

cations; and *bona fide* inventors would be benefited by the increased respectability of such intelligently considered grants.

Life is so largely a question of food, as to have caused Dr. Samuel Johnson to have defined a benefactor of his species "the man who caused two blades of grass to grow where one grew before." Yet there are those, who would endorse this sentiment in the abstract, who yet would deny invention the privilege of gathering its own first fruits.

It has been shown that, the higher the civilization, the greater the number who are warmed, fed and clothed, and the better is their housing, food and raiment. Of this civilization, progress is the breath of life. As old necessities become satisfied and humanity assumes a higher and wider scope of existence, new wants and more lofty aspirations are developed. *In this march of improvement, inventors and discoverers are the vanguard;* without this element, society would stagnate and retrograde, as all history shows; its decay

"hath dried up realms to deserts."

The cause of inventors is therefore none other than that of humanity itself.

SHALL INVENTION BE TAXED?

If it be both lawful and expedient to "promote" invention (and the constitutional clause which authorizes patent grants explicitly states this as the *sole* object), the fees exacted of applicants for patents should, it would seem, be no more than sufficient to cover the expenses of the Patent Office, and if they overrun this amount—as they notoriously do—they should be lessened, or the surplus should be appropriated to increasing the efficiency of the machinery of examination. Furthermore, the imposts should be simple, few and not vexatious on the inventor, his heirs and assigns. Yet it is seriously proposed in the pending bills before Congress, to **add** to the already sufficient duty, a large additional one, which, being apportioned in several installments, will greatly and unnecessarily complicate and embarrass the holder of this species of franchise, and will operate to effectually discourage improvement in the useful arts, instead of to "promote" them, as enjoined in the Constitution. Now what is

the reason adduced for this additional mulct on ingenuity? Take the explanation of proponents' chief spokesman, before the House Committee, Judge Storrow.

"THE MONEY TEST."

Features are often patented which are afterwards found neither to be *useful*, nor to hold out hopes of usefulness enough to lead to attempts to improve them. A subsequent inventor, making a truly useful machine, unconsciously *uses* one of those features, and the patent stops him; it does not promote the progress of the useful arts that such a patent should live merely to hinder and not to constitute progress. * * * Virtual abandonment by the patentee is the only safe test; and this section, for this purpose, requires a fee of \$50 at the end of four years and \$100 at the end of nine years; non-payment of either is to **"Kill the patent."**

The learned counsel of the Boston Shoe and Leather Association does not explain why "a subsequent inventor" should desire to *use* a "useless" feature, nor whether the subsequent inventor would be willing that one occupying the relation to *him* that he does to the first should "unconsciously use" one of *his* features; he does, however, avow that the purpose of the tax on the original patentee is to **"Kill the patent."** There is no obscurity or contradiction of terms in this phrase. **"Kill the patent"** is an expression perfectly intelligible to every patentee, and to every patent pirate in the land. The expression **"Kill the patent"** unveils the real animus of the movement.

Judge Storrow says: "If the invention at once takes place in the arts as a practical thing, or if it so clearly embodies a great step forward that the inventor or others are incited to develop it to a practical and pecuniarily profitable application, it constitutes a progress, and the purpose of the law is satisfied."

PROPONENTS' STATEMENTS.

These statements imply:

1. That the patentee of a valuable invention can always pay the proposed additional fees when due, if he so desires; *an application we shall show, from the learned*

advocate's own admissions and those of his colleagues, to be the very reverse of the fact.

2. That the patentee is master of the situation, and can always himself procure the practical application of his invention or induce others so to do: *an implication which will be proved, out of the gentleman's own statements, to be egregiously and cruelly at variance with the history of almost all great inventions.*

3. That inventions which "embody a great step forward" [a radical departure] are those which most surely and most early secure recognition and "profitable application." *When in fact, the annals of such inventions as cited by the gentleman himself and by his colleagues—notably Professor Coffin—are crowded with melancholy evidence of the precise opposite.*

4. The learned advocate says: "The system [heavy deferred payments] works well abroad," *although the facts quoted by the learned advocate and his colleagues will be found to completely contradict this statement and to establish the truth of the assertion that—relatively to that in use here—the best of the foreign patent systems—that of England—"works badly;" not "well enough"—as alleged.*

Of the above implications, on the truth or fallacy of which the positions taken by proponents depend: the first three will be considered together.

First, then, it may be conceded that the small minority of well-to-do inventors may be benefited by the proposed tax, because it makes their franchises more select. But what of the nineteen in twenty, poor men? Those who will take the trouble to examine the annals of invention, and especially the experiences of those "*world movers*" who made the most radical departures, will find them teeming with contradictions of these gentlemen's hypothesis. Space permits only the citation of a few illustrations.

Mr. H. D. Hyde, the special representative of the Boston Shoe and Leather Association, admits that the all-important peg-strip "was invented by a poor man" (p. 59), and adds: "So far as my personal observation has gone, I believe the greater portion

of inventions are made by men who have not much thrift in the way of business, men without much business tact, and who are always looking forward to the protection of the patent law for their reward. These men *don't look to days' wages*, but are always thinking of the great reward a successful invention will bring them, under the patent law; they always believe that they will succeed sooner or later, and are that kind of men that are ready to work and wait for a great future. But they wouldn't do it if they did not see *that* at the end. The patentee has a spirit of invention born within him, and the patent law is a sort of foster-mother.

B. F. STURTEVANT.

"If I had the time or opportunity," says Mr. Hyde," "I could give some instances which are known to me personally; for example, if you will allow, take this pegging machine and peg-wood. *The man who invented both these was very poor.* He was at work trying to get a living in bottoming shoes, and he believed that a better way could be devised. **He was so poor that he could hardly keep body and soul together;** that is, he would work a few days in bottoming shoes, and then he would go to work upon his invention. **He finally brought out the idea successfully; but, owing to his poverty, he was not able to build his pegging machine or introduce his invention.**"

Now here was an invention confessedly of the first rank—a new and radical departure—which revolutionized the craft, and which ultimated in creating the very business of Messrs. Hyde & Storrow's clients. Manifestly here was one of proponents' fortunate originators of "a practical thing" (vide Storrow, page 155), and, of course, one of which, by reason of its intrinsic merits, capitalists would promptly take hold of. Was this Sturtevant's experience? No such thing. The inventor was, at this very point, at his wits end for money, and was compelled to mortgage a material portion of his invention for the means to perfect it, and pay the fees of the Solicitor and the Patent Office—to *sell his birth right for a mess of pottage*, so to speak. Now, at last, according to these gentlemen, he should have been master of the situation—but, so far from this having been the case, we are told that this enormous sacrifice "was the only way

possible for him to bring out his invention," and that when, on a subsequent occasion, he desired to patent his machine for making peg wood, he was still so *hard up* that he was constrained to again solicit pecuniary aid and obtain a loan of money from yet another man than the one who had first assisted him. And yet, so valuable were these inventions, that in after years, when the inventor desired to resume possession of his patents, it cost him \$60,000 so to do! (page 65).

We are not advised of the time which elapsed—but probably none knew better than the clever attorneys of the Shoe and Leather Association, that *the time is protracted and tedious in almost exact proportion to the greatness of the departure*—and Mr. Sturtevant must have been exceptionally lucky—as we shall soon abundantly show. If he 'was out of deep waters at the end of four years, when gentlemen would have had the Treasurer of the United States call on him for the first installment of the proposed additional tax, or even at the end of nine years, when they would have extorted the second *penalty for adding to the repertory of labor saving arts*.

Proponents' Allegations Falsified

BY THE

ANNALS OF ALL GREAT INVENTIONS.

The position taken by the advocates of the proposed changes, are conclusively falsified by the entire record of radical inventions, as may be seen by the few instances now cited as follows:

WILLIAM LEE.

Take the case of William Lee, the creator of the art of machine knitting. We see him in Elmore's immortal picture, watching his young wife plying her knitting needle as she held their babe in her lap, bravely earning the family bread; Lee having been deprived of his Cambridge fellowship for the sin of wedding her! Could not those movements be performed by machinery? Patiently he worked at the problem, animated by admiration of his heroic wife, and may-hap by visions of gratitude from the nation of which he believed himself the inspired benefactor; not unmixed with hopes of worldly advances to him and his. It was indeed a labor of love. We see him at last exultingly displaying the operations of the first knitting loom to his wife, and shortly after taking it to Windsor, not doubting that so wise a sovereign as Elizabeth would promptly grant him the desired patent, and give him the prestige of court favor. How were all these hopes dashed to the ground. Could he believe his ears—not a word of praise. A refusal of a patent for that which would "deprive poor knitting women of bread," and a command to "make none but silken hose." Desponding and disappointed he left his native shores, and England was deprived of one of her most lucrative industries—until long after poor Lee's death—when one of his apprentices brought the art back to the land of its birth.

ARTHUR WOLFF.

As to the adequacy of a short term of years to determine the remunerativeness of a patent and correlatively, the ability of the patentee, if a poor man, to meet a further demand upon his exchequer—Mr. John Farey, the most able and important of the witnesses examined by the British parliamentary committee of 1829, testified as follows:

Question. Do you consider that the term of fourteen years is sufficient in all cases?

Answer. By no means. I have stated before, that fourteen years *profitable* exercise of any invention is sufficient. The question is, when that profitable exercise will begin, and how much previous loss and outlay is to be made up. In some instances it begins from the first; in many instances it does not take place at all during the term of fourteen years. In the case of Mr. Wolff's invention of working steam engines by high pressure steam acting expansively either in one or in two cylinders, there was no profitable exercise of that invention for at least ten years out of the fourteen, and there was so much loss incurred at the first that the profit made during the last four years never repaid it (page 32).

Yet this invention of Wolff's ultimately proved to be of such importance, that, in the estimation of Mr. Farey, "the existence of deep mining in Cornwall even at that day, (half a century ago), depended upon it." Mr. Farey further stated, that "the difference in cost between the quality of coals consumed by the engines then in use (which were all on Mr. Wolff's system), and by an equal force of engines, such as were in use before he went into Cornwall in 1813, would absorb the profits of all the deep mining that is now carried on in that important mining district (page 33).

Here we have an invention of such consequence, that most extensive and valuable mining operations were dependent upon it, that was a bill of expense to the projector for the first ten years of the patent, and which did not repay his expenses during the lifetime of the original grant. Periodical fees had not at that time been adopted. Can gentlemen say that such fees would have constituted a just or even an expedient exaction in the case of Arthur Wolff?

“DUD” DUDLEY.

Although an earl's son—no better was the fate of Dudley, the founder of smelting by the use of anthracite coal, which cheapened iron to one-third its former price, and at the same time saved the forests of England from destruction. The great charcoal smelters of his day did not rest until they had ruined him. That Dudley's was no exceptional case is seen in the remark of Sir Hugh Platt, another inventor of that day, who, writing in 1589, quaintly and truly says, “I have always found it myne own experience an easier matter to devyse manie and profitable inventions than to dispose of one of them to the good of the author hymself.”

The experiences of Dudley were a too true epitome of those of the great pioneers and discoverers the world over—for we read that after achieving mechanical success in his persevering efforts, *he met a more serious difficulty in “the combination of iron masters to resist his invention.”* [So it seems that England, three centuries ago, had its prototypes of the railroad and shoe and leather associations of our day!] These powerful bodies “fastened law suits upon him and finally succeeded in getting him ousted from his works at Cradley, but

“Still his heart he kept, and toiled again,”

only to be again ruined by a mob of charcoal iron workers—instigated by the iron masters—who broke in upon his works, cut in pieces the new bellows, destroyed the machinery and laid the results of all his deep laid ingenuity in ruins. From that time forward Dudley was allowed no rest nor peace—he was mobbed by the ignorant, lawed by the rich iron masters of his neighborhood, and eventually overwhelmed by debts. Finally, rascality and ingratitude capped the climax. He was seized by his creditors, and held a prisoner for several thousand pounds. (Smile's Illustrated Biographies, page 75).

HENRY CORT,

One of the greatest of the long role of improvers of the iron manufacturers, was the unfortunate Henry Cort, of Lancaster, England. Having been reduced to bankruptcy in his enter-

prises, his case was brought before Parliament by his heirs—but it is stated by Mr. Mushet that **the evidence was not fairly taken by the Parliamentary Committee.** That the petitioners were overborne by the audacity of a Mr. Samuel Homfrey, one of the great Welsh iron masters, whose statements are now conceded to have been altogether at variance with the known facts, and that it was under his influence that Mr. Gilbert drew up the *fallacious report of the Committee.* The illustrious James Watt, writing to Dr. Black, in 1784, remarks, “Mr. Cort has, as you observe, been most illiberally treated by *the trade*; they are ignorant brutes; but he exposed himself to it by showing them the process before it was perfect, and they, seeing his ignorance of the common operations of making iron, laughed at and despised him; *yet they will contrive, by some dirty evasion, to use his process, or such parts as they like, without acknowledging him in it. I shall be glad to be able to be of any use to him.*”

Samuel Smiles, in quoting this correspondence, remarks: “Watt’s fellow-feeling was naturally excited in favor of the plundered inventor; he himself having, all his life, been exposed to the attacks of like piratical assailants.” He adds, in his comments on this great inventor’s “sad history:” “Though Cort thus died in comparative poverty, he laid the foundations of many gigantic fortunes. He may be said to have been, in a great measure, the author of our (English) modern iron-aristocracy, who still manufacture after the processes which he invented or perfected, but for which they never paid him a shilling of royalty. These men of gigantic fortunes have owed much—we might say almost everything—to the ruined projector of the little mill at Fontley. Their wealth has enriched many families of the older aristocracy and been the foundation of several modern peerages. Yet Henry Cort, the rock from which these fortunes were hewn, is already all but forgotten; and his surviving children—now aged and infirm—are dependent for their support upon the slender pittance wrung by repeated entreaty and expostulation from the State. The career of Richard Crawshay, the first of the great iron masters who had the sense to appreciate and adopt the methods of manufacturing iron, invented by Henry Cort, is a not unfitting commentary on the sad history we have thus briefly described. It shows how—as respects mere money-mak-

ing—shrewdness is more potent than the inventive faculty, and business tact than manufacturing skill.” (It will be remembered that the most vindictive opponent of the efforts to befriend the family of the deceased Henry Cort was Homfrey, the colleague of this same Richard Crawshay.) While the great iron masters, by freely availing themselves of Cort’s inventions, have been adding estates to estate, the only estate secured by Henry Cort was the little domain of six feet by two in which he lies interred in Hampstead Church-yard. (Indust. Biog. p. 189.) Whole volumes might be filled with the dismal story of the pioneers of art. Its melancholy monotony presents our common human nature, alas, in one of its most discreditable phases.

WILLIAM HARGREAVES.

A kindred story to that of Cort, is found in the hard fate of Hargreaves. In Hargreaves’ time, Lancashire was already noted for its spinning and weaving industries, the work being done by aid of the old-fashioned spinning-wheel and hand-loom. The scene lies in Hargreaves humble cottage, on one of the then wild hill-sides of that county. Stretched on the cleanly scrubbed floor lay young Hargreaves, chalk in hand. Suddenly he springs to his feet, and in reply to some feeble question of his wife, who had not risen since the day that she gave birth to a little stranger, exclaimed loudly that he “*had it!*” and taking her in his sturdy arms in a blanket, the baby in her arms, he lifted her out and held her over the rude drawing upon the floor. This he explained, and she joined in a small, hopeful, happy laugh with his high-toned assurance that she should never again toil at the spinning-wheel, and that he should never again “play” and have his loom standing for want of weft.

“Our fortune is made when this is made,” said he, pointing to his drawings on the floor.

“What will you call it?” asked his wife.

“Call it? What, and we call it after thyself, Jenny? They called thee Spinning Jenny afore I had thee, because thou beat every lass of Stanshill Moor at the wheel. What if we call it the Spinning Jenny?” The Spinning Jenny could spin twelve threads, instead of one, as by hand spinning.

The populace broke the machine to pieces, and poor Hargreaves' heart at the same time.

Arkwright, a common barber, caught the idea of Hargreaves, improved upon it, realized half a million sterling, and became Sir Richard Arkwright, whose son, in 1843, died the richest Commoner in England.

JAMES WATT.

The sympathy of James Watt with his fellow-sufferer, Cort, has been spoken of. Watt, himself, labored at his invention for many years, contending with many difficulties, *but especially with the main difficulty of limited means.* He had borrowed considerable sums of money from Dr. Black, to enable him to prosecute his experiments, and he felt the debt to hang like a millstone around his neck. It is stated of him that he was more than once on the point of abandoning his invention in despair. When, in consequence of pecuniary embarrassments, Watt's hitherto generous helper, Dr. Roebuck, was obliged to make a disposal of his own assets for the benefit of his creditors, he transferred to Mr. Matthew Boulton, of Soho, his (Roebuck's) entire interest [two-thirds] in Watt's inventions, and, *although Watt had been at work at his engine for years, the value of the patent was deemed too small for enumeration among the assets, Roebuck's creditors not esteeming it worth one farthing!* Seven tedious years elapsed even after the grant of his patent, before he was himself sufficiently satisfied of his ability to undertake to supply effective engines, and even then the harder task remained of persuading the great mine proprietors to avail themselves of the boon. A tax, four years after his grant, such as proposed to be engrafted on the law in this country, would have caught the inventor of the steam engine in the very darkest hour of his embarrassments, and would quite possibly have deprived him of the patent. And it is worthy of remark, that Watt's invention at that time was amenable to all the charges brought by Mr. Storow, against a patent which should be "**killed.**" It had not "at once taken its place among the arts as a practicable thing," nor had "others been incited to develop it to a practical and pecuniarily profitable application." It did not, according to Judge Storow's criterion, "constitute a progress," and "the purpose of the law [according to Storow] was not satisfied."

It would not [according to Storow] have "promoted the progress of the useful arts," that such a patent "should live merely to hinder, and not to constitute progress," Nay, more, there were able advocates of that day, who, for adequate consideration, did, voluminously and at sore waste of Watt's precious time and delicate health, propound and enforce arguments almost identical with those now presented. Yet this was the steam engine, struggling for recognition in the hands of its most illustrious projector!

In the face of this, striking commetary on their propositions, the attorneys of the Boston Shoe and Leather Association would have the Committee believe "the profits of a patent that is *worth preserving*" will, as a matter of course, enable the owner, "after a lapse of a few years," to pay the proposed additional fee. (See argument of Chauncey Smith, Esq., page 280.) It is inconceivable that one so learned in invention as Mr. Smith, should be ignorant of the fact that *inventions of the most radical, and therefore important class, are among the slowest to reach public and profitable recognition.*

It cannot be devised that this was the case with Watt's engine. Indeed, Watt's biographer asserts that the extension of the original term of his patent by Parliament, alone saved the illustrious inventor from bankruptcy. Yet gentlemen would have visited Watt twice during his heroic struggle, and have sought to "**kill**" the patent, "the profits of which," not "enabling him to pay the small fee," afforded the true test (according to Storow), that it was not "worth preserving."

Did space permit, *remunerativeness in its early stages could be shown to be the poorest possible criticism of the value of an invention.*

No unprejudiced person can read the story of industrial progress of a century past, and deny that it is, in the case of the original projectors, an all but unvarying narrative of the most disheartening, and, for a long time, profitless struggle; for, where the invention is in the nature of a radical departure from established usage, there is added to the always manifested indifference and even hostility of the community, the embarrassments growing out of the fact that the project is so much in advance of the mechanical capabilities of the age, that it is with the greatest difficulty it can be executed. The case of Watt has been cited, and will be further alluded to, because, while it is

one that the most specious pleading dare not ignore, it is, at the same time, a fair type of its class. Now Samuel Smiles relates that Watt, when laboring upon his invention at Glasgow, was baffled and thrown into despair by the clumsiness and incompetence of his workmen. Writing to Dr. Roebuck upon one occasion, he said: "You ask me what is the principal hindrance in erecting engines. It is always the smith-work." Watt's first engine was made by a "whitesmith," of hammered iron, soldered together; but the workman having used quicksilver-amalgam to keep the cylinder air-tight, the mercury dropped through the inequalities into the interior, and, to use the inventor's own language, "played the devil with the solder!" Watt's next cylinder was cast and bored at Carron, but it was so untrue that it proved next to useless. The piston could not be kept steam-tight, notwithstanding the various expedients which were adopted, of stuffing it with paper, cork, putty, pasteboard and *old hats*. Even after Watt had removed to Birmingham, and had had the assistance of Boulton's best workmen, then reputed the most skillful in England, the performance was so unsatisfactory, that Smeaton, on witnessing the engine at work, expressed the opinion that, notwithstanding the excellence of the invention, it could never be brought into general use, because of the difficulty of getting its various parts manufactured with sufficient precision. Great indeed, must have seemed the obstacles to success, to have elicited this remark from the designer and builder of the Eddystone light-house!

The experiences of Watt afford a striking illustration of the difficulties that beset an invention that is in advance of the age. Watt's devices ante-dated by many years, the advent of the great iron-working machines of our time, the planing and boring, the turning and slotting and drilling machines of a modern machine shop had not made their appearance. The "whitesmith's" art, as the term then went, fell far short of the nice and, at the same time, large requirements of the steam engine. Even after the grant of his patent, Watt struggled for seven tedious years with the most adverse circumstances, of which the lack of mechanics and of mechanical appliances were the least vexatious. Watt and his original capitalist were both bankrupt. Later, when Watt had obtained the powerful association of Boulton, and had so systematized the manufacture as to feel able

to undertake to supply engines that could be relied upon for the deep mine pumping for which they were designed; he found it almost impossible to secure recognition from the great mining proprietors whose patronage was deemed necessary for crowning his long toil with that pecuniary success which alone would justify the immense sacrifices of those weary years.

Unwilling to abandon to a caprice, their victory over the elements, the manufacturers fell upon the desperate expedient of making these Croesuses a present of the steam engine; the manufacturers contracting, at their own expense, to make the necessary changes, to remove the Newcomen engines, to put in those of the Boulton and Watt construction, and finally to remove the new and replace the old engines, if required; all at their sole cost! For all this the only pay demanded by the manufacturers was the saving in fuel, effected in five years, over the engines previously employed.

Thus did these lordly proprietors of drifts and adits get, for absolutely nothing, the machines that saved some of them from bankruptcy. But for Watt's fortunate association with a man of such exceptional ability as Matthew Boulton, the public might have paid for its indifference and obtusity by an indefinite postponement of the priceless boon of the steam engine; for, although highly ingenious minds had long been and were still at work on the problem, who shall estimate the loss of the transcendent capacities of James Watt?

JAMES NASMYTH.

The invention of the steam-hammer is another case in point. This device Tomlinson declared to be "one of the most perfect of artificial machines and noblest triumphs of mind over matter that modern English engineers have yet developed. Yet this great inventor was utterly unable to secure a patent, for lack of means to pay the—to him—prohibitory fees of the British office; and the patent was only saved to him, at the last moment, by the generosity of a relation, who advanced the required funds. So that the originator of the steam-hammer came very near losing his patent, or rather failing to get any patent at all. His biographer relates that, notwithstanding strenuous and persistent efforts through a number of years, Nasmyth could not induce

any iron master to put one up, and he was *destitute of means* necessary to erect one or even to patent the invention. He alone appreciated its great capabilities, and, so far as appeared, no one else thought it worth one farthing. And yet the opportunities of Nasmyth were better than many a poor inventor, for he was junior partner in a small iron mill. Seeing himself on the brink of losing his property in the invention, he, in desperation, applied to and, wonderful to relate, obtained from a relative the amount of the patent fee—at that time about £280. Here we see the high English fees operating to nearly close the doors of their patent office against an invention of the first rank—*discriminating, not against triviality of invention, but against impecuniosity of the inventor*. An invention which made possible the great ocean steam ships of our day, and to which his country owes so much of her present wealth and prestige—was saved to the inventor by the accident of England possessing a man willing to risk £280 on a poor relation!

JOHN HOUGHTON.

The history of the invention of the saw mill is to the same import. Many of us can remember seeing, in thousands of forest clearings, great logs of walnut and other valuable timber rolled into piles to be burnt. It seemed a sad waste. Now the portable saw-mill has changed all this, and has enabled the utilization of millions of dollars' worth of valuable lumber. We are told that the reputed inventor of the common hand-saw was so highly esteemed by the ancients, as to have received divine honors *after* death; but the history of invention makes it but too probable that he was persecuted unto death.

The story of the saw-mill, while it enforces the point of this argument, affords a striking illustration of the gross inexpediency of oppressing inventors. The first saw-mill in England was erected in 1663, but was shortly abandoned in consequence of the determined opposition of the hand-sawyers. Fully three generations came and went before the second saw-mill was set up, near the same spot, in the year 1767, by John Houghton, a London timber merchant. But the mill was scarcely erected when a mob, composed, doubtless, in part of the worthy descendants of the first, assembled and razed the mill to the ground.

By this time, however, public opinion no longer tolerated mob outrage. The principal rioters were punished, and the proprietor, having been indemnified, re-erected his mill, which was thereafter suffered to work without molestation. By the violence of a few blind and vicious fools, the nation was thus deprived of the inestimable boon of the saw-mill for more than a century, to say nothing of the relatively insignificant, but still considerable, loss of the two mills thus wantonly destroyed.

A late author remarks: "Even in comparatively recent periods, new inventions have had to encounter serious rioting and machine-breaking fury. Kay, of the fly-shuttle, Hargreaves, of the Spinning Jenny, and Arkwright, of the throstle-frame, all had to fly from Lancashire, glad to escape with their lives. Even improved agricultural implements, capable of largely increasing the yield of bread-stuffs, have had the same opposition to encounter, and, in our own time, bands of rural marauders have gone from farm to farm, breaking drill-plows, winnowing, threshing, and other machinery; not perceiving that, if their policy had proved successful and tools could have been effectually destroyed, the human race would have at once been reduced to their teeth and nails, and civilization summarily abolished.

The author of *Industrial Biography* relates how Mr. Robinson, a Dublin gentleman of spirit and enterprise, was desirous of giving Irish industry the benefit of manufacturing its own machine-made nails, then wholly imported from England, and employed the since celebrated William Fairburn an entire summer, to erect suitable machinery. All this expense and risk proved of no avail; not from any deficiencies in the apparatus, but from the proprietor's inability to brave the opposition and threats of violence of the Trades Unions, then all powerful in Dublin. The machinery was never set to work; the nail making trade left Ireland, never to return, and the Irish market was thenceforth supplied entirely with English made nails. The Irish iron manufacture was ruined in the same way; not through any local disadvantages, but solely in consequence of the prohibitory regulations enforced by the workmen of the trades unions.

BERNARD PALISSY.

Bernard Palissy was a skillful painter on glass who, in the year 1539, went to pursue his calling in the town of Saintes, in France.

“Matters went on very well for some time, until Palissy, now having been two years at Saintes, saw a cup of some sort of composition, very beautifully turned and finished, and became immediately possessed with the idea of making a vase of similar construction.”

Under the influence of this idea, he abandoned the employment which had before supported his family, spending all his time in kneading earth, and afterwards baking it. But his first endeavors were unfortunate; and poverty, with all its horrors, entered his house. No matter; Palissy struggled on, sustained by a hope that, although a beggar to-day, to-morrow he may possess more gold than his strong box will hold. But many to-morrows came, and no gold; his wife complained bitterly, and his children, their eyes streaming with tears, clasped their thin hands and implored him to resume his old profession of painting on glass; by the profits of which they had lived so comfortable; but all in vain. Twenty years passed in this manner, Palissy remaining faithful to that one idea, although every one around him laughed at him and treated him as if he were insane, and some even went so far as to accuse him of sorcery and forgery. In the midst of all this, an apprentice, who had been with him a long time, suddenly declared his intention of leaving him, and claimed his wages. Poor Palissy, stripped of every thing he ever possessed, is obliged to give him a part of his own clothing. Left to himself, he then directed his steps to his oven, which was in the cellar. Alas! it wanted wood! What could he do? He ran into the garden and pulled down all the trellis work, and the fire was soon blazing. Palissy, beside himself with anxiety, took one article of furniture after another and threw them on the fire, in spite of the entreaties of his family; and, at last, success crowned his efforts. A long cry of joy echoed through the vaulted cellar, and made itself heard through the whole house; and when his wife came running down, expecting to find a raving maniac, she saw her husband standing motionless, his eyes fixed in amazement on a piece of pottery of splendid colors, which he held in both hands.

The genius of invention, a long time deaf to his cries, had at last laid the crown of success upon his head. Success, that magic sound to the ear of genius; Palissy had the faith which never deceives.

The rumor of his discovery spread far and wide. Poverty fled from his house. Henry I. sent for him to Paris, and gave him lodgings in the Tuileries; it was here that he obtained a patent for the inventions of *Royal rustic pottery* of all sorts. He was now known by the name of Bernard of the Tuileries.

A skillful workman, Palissy also understood medicine, painting and sculpture, handling equally well the pen and pencil, and possessing a depth of thought never existing but in a man of genius.

The edict against the Protestants, published in 1559, by Henry III. at Ecouen, did not spare Palissy. Professing the reformed religion, he was dragged to the Bastile, where he died in 1589. Henry III. went to see him in prison, and told him that he was "afraid he would be obliged to leave him in the hands of his enemies."

"You have said repeatedly, sire, that you pity me," replied Palissy; "but I sincerely pity you. '*Be obliged!*' that is no royal expression; I will teach you a kingly language. Nor you, nor all your people shall oblige *me* to bend my knees before statutes; No! I will die first!"

JACQUARD.

Jacquard, of Lyons, born in the humble ranks of workmen, invented the admirable loom which bears his name, and which will always keep him in remembrance.

His father was a master-workman in silk, at Lyons, where, in the year 1752, the son was born. The sight of one of Vancanson's wonderful machines, revealed to him the nature of his own genius. His first endeavors were received with sneers and jests; a common fate with men of talent. But obstacles only redoubled Jacquard's industry. Supported by the aid of several independent workmen, he succeeded in establishing some improvements of his own invention, for winding and weaving silk; but here new difficulties, new impediments, and we may also say, new dangers threatened him. "A second Galileo, says one of his biographers, Jacquard was persecuted by his fellow citizens, who, instead of encouraging him, loaded him with reproaches, and even went so far as to threaten his life. They looked upon him as an ambitious character, whose object was

to injure his fellow workmen, and to ruin labor and bring poverty upon their heads by his invention; so that the unfortunate man, terrified and discouraged by the treatment he met with, and despairing of being able to overcome their prejudices, shut up his admirable mechanism in a garret, and waited till more fortunate days should give him an opportunity of meeting with justice."

The above statement is strictly true. The new invention was publicly destroyed, and the life of the inventor three times endangered. The great advantages attendant upon this important discovery were obstinately overlooked; for no one had any regard to the diminution of hands employed, to economy in workmanship, or to the alleviation of the sufferings of some of the laborers, which, in one process was very severe.

DANIEL LAMSON.

In the year 1870, application was made to the Commissioner of Patents, by Emily J. Lamson, for extension of the term of the patent granted to her late husband, Daniel Lamson, for a machine for notching hoops.

The Examining Board reported that "the invention was new when patented, and a great stride in advance of the pre-existing machines. It is unquestionably valuable. The inventor, who was a poor man, was diligent in attempting to introduce his machine, until the breaking out of the war, when he enlisted in a Massachusetts regiment. He was killed at Fredericksburg."

About the time that Daniel Lamson's life was going out in trenches of Fredericksburg, forfeited to save that of his government; proponents would have had that same government have presented the widow with a bill of fifty dollars for his public services as an inventor, or, in default of payment, forfeit the patent.

WILLIAM HICKS.

William Hicks was the inventor of an improvement in breech-loading fire arms which the Board of Examiners in Chief reported to be "of great novelty and utility." It was "extensively adopted, more than 200,000 weapons having been made embodying the invention," but as this extensive manufacture was

wholly by very wealthy and defiant infringers, and he was poor, it only added to his embarrassments. The Board of Examiners, in adverting to these circumstances said "he was deterred, by his want of means, from engaging in litigation with the infringers, who were wealthy, and would spare no means to defeat him to whom they had refused to account in a peaceable manner." The Board further say "there is no doubt that the Hicks' invention *afforded the foundation* for all the improvements used by the infringers [who were also the opposers of the extension] that there can be no question but that it has proved of great value, and that the applicant has entirely failed of receiving any reward from it, without fault on his part."

The patent of William Hicks was not efficient in "stopping" these users of his invention, notwithstanding that they do not appear to have been "*unconscious users.*" (See Storrow, argt., p. 156.)

OWEN DORSEY.

Owen Dorsey was the originator of a new and extremely valuable departure in reaping machines. Acting Commissioner Hodges, in allusion to this improvement, said: "The device was the first to achieve the important and long sought desideratum of automatically separating each successive gavel from the remaining grain, and of sweeping it out of the way of the team when they come round again." The device is defined, by the inventor, to be "a revolving rake whose arm is so pivoted to the post as to give the operator power to direct the path of the rake at will."

Commissioner Hodges, in his ruling on this case, said: "The vast extent to which the different modifications of machines embodying the fundamental principles of Dorsey's have gone into use, and the exclusive possession they have taken of the market, leave no room for hesitation on the point before us. The invention must be classed among the leading ones of the country and the age.

"For the boon he has thereby bestowed upon the country, the patentee deserves an ample—an abundant remuneration. He is one of those favored few whom his fellow-citizens love to honor with such a liberal competence as shall encourage others to follow in his path. This has not been the result in his case.

As his patent is about to expire, he presents himself in a condition but little above impoverishment. He is not suspected of heedlessness, extravagance or wastefulness. There has been no want of diligence in introducing his invention into general use."

Had this useful citizen—who would seem, like too many of his tribe, to have lacked the business faculty possessed in such perfection by lesser men—been unable to meet one of the proposed periodical fees, the case would have illustrated Mr. Storrow's "safe test," of "virtual abandonment," and have operated "**to kill the patent.**"

HENRY VOELTER.

Henry Voelter was the inventor of the mechanical production of paper-pulp from wood, an invention that, by reducing the cost of converting wood-fiber to paper-pulp to less than one-half of that prepared by chemical agency, and less than three-tenths of pulp prepared from rags, revolutionized the manufacture of paper throughout the civilized world. Duncan, acting Commissioner, in his decision in favor of extending this patent, dated 26th August, 1870, wrote: "The invention is *radical in its character*, and clearly proved to be of great value and importance to the public. To its full development and introduction, the inventor has given the best years of his life, laboring therefor with an energy, and zeal, and a singleness of purpose that find a parallel only among the great inventors whose labors have become historic.

"The costly experiments necessary to perfect the invention, requiring the employment of a retinue of mechanics, clerks, draughtsmen, and engineers, were continued through a space of ten years, and consumed the larger part of the inventor's time; and when the invention was so far completed as to warrant the taking of patents upon it, a much larger expense was incurred in advertising it, and exhibiting it at international and other exhibitions, in constructing and operating experimental machines, and *combating the prejudices of the public* [the **trade**] *to the use of the material furnished by the new process.*

"Yet, the inventor persevered, in spite of every obstacle and discouragement, devoting nearly all his time and energies, after the grant of his patent, to the success of the invention; sacrificing health, and freely investing a large fortune in the enterprise.

"As the result of his lavish expenditure, and these constant

and untiring labors, *prejudice at last gives way*, and the invention begins to be duly appreciated, when the inventor finds himself, close upon the expiration of the patent, with a balance-sheet showing a *net loss of more than \$70,000.*"

After a statement of the value of the invention, as compared with the pre-existing processes of preparing paper-pulp, the Commissioner says: "The real value of the invention is to be estimated in millions;" and that "It is to be regretted that the man who, by years of study and costly experiment, by the exercise of a sublime faith, and by active and persistent efforts, has given the world so valuable an invention, should [under the extension] have no larger interest in it at a time when the public appreciation of it might amply compensate him for the ingenuity displayed, for his many trials, and for his unstinted expenditure of time and money.

While it, perhaps, may be asserted that the man who could beggar himself, and spend a fortune in developing an invention, would not be likely to let the patent lapse by non-payment of the, to him, paltry tax of \$150: it may, nevertheless, be enquired *why*, under the circumstances, *he should be taxed at all?*

LAFAYETTE LOUIS.

Lafayette Louis was the inventor of a Tremolo Action in Melodeons, for which he obtained a patent November 18th, 1856. The patentee being dead, and the patent being about to expire, his widow, E. C. Dora Louis, made application for extension of the patent. The then Commissioner of Patents, after hearing the facts and arguments in her behalf, decided "that this invention was new and useful; that the receipts of the inventor therefrom were less than his expenditures, and that his diligence was remarkable." He says: "The statement of the widow upon this point is pathetic and worth reproducing." She stated that "after the grant, her husband devoted his time almost exclusively to introducing his invention to the public. His experiments were numerous and very costly, and so exhausted his means, that he was unable to embark in the manufacture himself, although this had always been his intention, from the time that he obtained his patent. He, therefore, made repeated efforts to get partners, who would furnish the necessary funds for manufacturing; but his

efforts were only fraught with failure, and he was never able to secure any one who would so manage the patent as to bring him an income. He frequently gave the patent papers as collateral security for small sums of money, paying thereon exorbitant interest, in order to obtain the means of living. In addition to what her husband was able to obtain in this way, and by the limited time that he devoted to his profession, the petitioner also earned money by singing and reading in public, and by various other expedients assisted in their joint maintenance; and she also advanced him money, obtained by her personal exertions, for use in working the patent. Her husband devoted his life, talents, and every dollar he could get, to putting the tremolo improvement before the public in such a manner as to satisfy all lovers of music in regard to its excellence, novelty, and durability, believing always that, in time, he would reap his reward. That to the development and introduction of the invention was devoted nearly all that she and her husband, both, earned, borrowed, hired, or begged, during the life of the patent."

THEODORE T. WOODRUFF.

This inventor was, after an exhaustive investigation, accredited by the United States Patent Office—the only public body competent to pass judgment on such questions—as "the real creator of the modern appliance known as the sleeping-car (commonly known as "Pullman" car), an invention that contributes so largely to the comfort and convenience of the traveling public: and not only is it to Theodore T. Woodruff that the world is indebted for the conception and embodiment of the device, but for its introduction into general use.

As in the case of almost every radical invention, the public were slow to appreciate its advantages; and great difficulties were experienced in negotiations with railroad corporations. In view of the facts developed by the record, it is no exaggeration on his part when he says that he **"fought the invention into use."** He not only produced a valuable invention, but he may be said to have created a market for the same.

"It can hardly (says the Commissioner) be said that the sum received by him is an adequate remuneration for an invention of such immense public value and importance; and it is difficult,

upon the facts presented, to see wherein the failure to receive due compensation is attributable to neglect or fault on his part.

“There does not seem, in the present case, any force in the objection that the extension will operate oppressively upon the public. The protection afforded the inventor has not caused any deterioration in the character of the pre-existing railroad car, nor prevented marked improvements therein. *Every person is at liberty to choose between the sleeping-car on the one hand, and other accommodations in no wise inferior to what would have been within his reach had the sleeping-car never been called into existence.* If he chooses the latter it is because, by reason of the additional comfort and convenience attending it, he can afford to pay the additional price charged; and finds it profitable to himself so to do. He ought not then, to complain that the meritorious inventor should also derive profit from the same source, nor ask, in order that he may secure the enjoyment of a luxury at a reduced price, that the inventor's income from that source which his own genius has originated, shall terminate before he has received an adequate remuneration for the benefit which he has conferred upon the world.”

The instances might easily be multiplied a hundred fold: those cited are not in the least degree, or in any respect, exceptional, but fairly illustrative of what any one may find for himself who will take the trouble to look into these annals of the gifted and devoted men, who have led the van and borne the brunt of the battle of material progress of their race—too often, alas, to perish in the fray! Little does he know, who is intent to pursue the beaten track of conventional life, of the doubts, the fears, the perplexities, the embarrassments that beset the path of him who essays to explore and open up new avenues of thought and action. Arduous enough would be his task if it ended with his conquest of the occult forces of nature; but difficult and baffling as that task often is, it is an easy and grateful toil in comparison with what falls to his lot in the inevitable struggle with self-satisfied obtuseness, charlatanry, pretension, and greed, that confront him at every step of his way to the final goal—not always attained—of recognition and success. Many inventions of high intrinsic merit, and great value to mankind, fall short at first, and often for years, of practical adoption, either because the community is not educated to their level, or

because artificers cannot be found capable of the nice and special work required. Such, it has been seen, was the experience of James Watt, of "Dud" Dudley, of Henry Cort, and, in a word, of almost every originator of devices of like radical stamp.

WILLIAM WOODWORTH.

The revolution in the production of flooring boards, by the invention of William Woodworth, is within the memory of men still in the vigor of business life. Of this important invention, Mr. Seth C. Staples remarked that "it introduced a new era. The process of planing, tonguing, and grooving boards was well known to mechanics before, to be tedious and laborious. Apprentices were set to planing, and even then it was difficult to get the board of precise dimensions throughout. Then there was one particular tool used for tonguing, and another for grooving [where such refinement of structure was resorted to;—it was generally dispensed with, on account of the trouble and cost.] Altogether, a smart man could, perhaps, prepare from ten to fifteen planks per day. Most mechanics did not believe it possible that the work could be done in any other way. They would not buy the right of Woodworth. He was obliged to erect a machine [to demonstrate the working efficacy of his device.]"

Even in the early years of this invention, it was conceded that it would face, tongue, groove, and gauge forty boards, while the most skillful carpenter could do one; and that it would do it more exactly, and would run all day and all night long, if necessary. In fact, it was instrumental in causing the use of tongued and grooved flooring—with all its manifold advantages of absolute accuracy, air-tight joints, secret-nailing, and so forth—to become of universal, instead of extremely rare and exceptional application.

Now, what happened to William Woodworth, is told in the touching narrative of his son, William W. Woodworth, who says that his father, "while engaged in perfecting his discovery, was obliged to apply for pecuniary aid; and procured assistance from James Strong only by the sacrifice of an assignment of one-half his right to the invention. That, after obtaining the patent, Woodworth and Strong *were obliged to incur ruinous expenses*, in bringing their machine into public notice and favor. That, embarrassed by the opposition of builders, and especially of

joiners, as well as with debts and with heavy losses by fire, the work, as was supposed, of incendiaries instigated by enemies; and threatened with litigation; they were forced to enter into ruinous compromises, which entailed great difficulties in subsequent efforts to dispose of their franchise. Such was the condition of the enterprise, when, on the 9th of February, 1839, the inventor, Woodworth, died in the city of New York, "*in poverty*," just eleven years after the grant of his patent. On this public benefactor and real martyr, proponents, who are the friends of the inventor, would have had his country twice called for collection of its little bill. Well might the inventor say, like one of old: "If this be my country's justice, it is like Roman gratitude; the recipient sinks beneath its weight!"

JEARUM ATKINS.

Jearum Atkins was one of the most ingenious and unfortunate of those architects who have builded the temple of our national prosperity upon such a sure foundation. A native of the Green Mountains, he, while yet a boy, displayed remarkable mechanical faculty, and, despite poverty and limited facilities for acquiring knowledge, he dived deep into mathematics, and made experimental researches in physical law. While still a young man, he was thrown from his wagon, and received spinal injuries which laid him helpless upon a bed of pain, from which he was not destined to rise for twenty-four long years. While thus stretched upon his back, with his drawing-board suspended above his face, he conceived and worked out a vast number of inventions. The drawings illustrating them are marvels of accuracy and neatness.

Among the inventions he made and perfected is the Automatic Sweep-Rake for harvesting machines, for which he received a patent December 21st, 1852. Considered as a piece of ingeniously elaborated mechanism, this device has few equals in the whole range of mechanics. Considered as a machine for the accomplishment of a useful purpose, it has not been surpassed by any of its successors in the field of improvement which its projector was the first to open and explore.

This device presents a rake, operating from an upright pivot or shaft, with a continuous rotary movement, and deriving its

motion from the continuous motion of the driving-wheel. In this regard it is claimed to be the progenitor of the revolving sweep-rakes, which have since superseded all other automatic devices for removing the cut grain from the platform. It has been so regarded by such men as Charles Mason and Elisha Foote, both ex-commissioners of patents, and both men of great ability.

During the first years of the patent this machine went into extensive and successful use.

The history of this invention gives a striking illustration of the usual fate of him who opens new paths, and bestows upon his country new ideas.

Being bed-ridden, he was forced to trust the execution of his business to other hands. John S. Wright, of Chicago, an able but eccentric man, purchased an interest in the patent, and had built a large number of machines. The success of these machines and the favor with which they were received during two years, turned his head and he determined to seize fortune at a single grasp, so he contracted with the builders for the manufacture of several thousands of these harvesters, all of which were readily sold, and nearly all of which came as readily back upon his hands, because of bad material and bad workmanship,—that ruined him.

The money he had promised to pay for an interest in the patent was not paid. His ability to earn more, by manufacturing the machines, was destroyed by his failure; for the public never take the trouble to discriminate between the invention and the specific causes of inefficiency. If the new device falls short of their expectations, it and all concerned in its production are stigmatized as “humbugs.” The reputation of the machine was injured, the chances of enlisting other capital were destroyed, and Wright refused to relinquish the interest which he held in the patent.

That was the condition at the time when a second installment of the proposed fee would have become due from Jearum Atkins—lying there now A. D. 1861—these ten or more weary years, prone on his back, in his little home in Chelsea, Illinois—day by day and year by year, bravely and with infinite patience—working out the conceptions of his teeming brain!

The patent doubtless would have lapsed if addittonal fees had been imposed upon him at that time.

Perhaps the inventor would have been no worse off than he is; because, poor and crippled, he has been unable to realize any further benefits from it; but the facts of his invention and his misfortunes remain. The genius of his invention pervades thousands of these machines, without which our fields could not be harvested nor our granaries filled.

S. S. ALLEN.

The experience of this inventor affords another striking illustration of the confusion oft-times resulting from confounding an invention with mechanical parts with which it may happen—for the time being—to be associated, and imputing to it faults of material and construction for which it is not answerable and with which it has no connection.

The object and effect of the Allen improvement was to remove the “side-draft,” which was one of the greatest practical difficulties in the harvesters of that period, 1857. The case is pertinent to the present enquiry in several aspects, for example:

As illustrating the distinction between the invention and any specific machine which happened—for the time being—to embody it, a destinction very often overlooked, and which even a majority of the Board of Examiners in Chief, acting in this case, seem to have misunderstood.

The Commissioner (Leggett) said “the inventor evidently failed to make a first-class machine, but I am not so clear as the majority of the Board of Examiners in Chief appear to be, that his failure was from the fact that he did not understand the full scope of his patent. The machine to which he attached his improvement was not the best and most popular, and there is no evidence that their failure to give satisfaction was chargeable in any degree to the patent, or to any misunderstanding or misapplication of the patented improvement.”

If the Commissioner here took the just view, then Judge Storow’s criterion is too rigorous, where (as on page 155) he requires that “the invention shall *at once* take its place in the arts as a practical thing,” or that it shall “so clearly embody

a great step forward that the inventor or others are incited to develop it to a practical or *pecuniarily profitable* application."

The case of Allen is further pertinent to the present enquiry as illustrating the, alas! too frequent lot of poverty and embarrassment of the inventor of a radical and intrinsically valuable improvement, and the consequent especial liability of patents of this class to become forfeit under the proposed fees.

The Commissioner says: "The case is one of *common occurrence*. Allen spent much time and money in developing and patenting an invention which is conceded to be of great value. He made strenuous efforts to recover compensation for his time and expenditures, but up to the time of his death he had not done so. *By reason of his patent he died insolvent*. His executors did not comprehend the value of his patent, and did not feel justified in making further expenditures upon it." Would the case of widow Allen have been a proper one for application of the proposed additional tax?

BENJAMIN F. RICE.

In the matter of the application of Roxanna Rice, executrix of Benjamin F. Rice, deceased, for extension of the patent granted to said Rice, April 28, 1857, for improvement in machines for making Paper Bags.

In passing upon this case, the Commissioner said: "The invention is proven to be of great value, saving ten or twelve per cent. of the cost of manufacturing, over any other machine;" and further remarks: "It often happens that the life of a patent is nearly expended before the inventor is able to make the public so appreciate the value of the invention, as to make it in any degree remunerative to him. In other cases, the inventor is so impeded and embarrassed by poverty, as to render it impossible for him to get his improvement upon the market in such time and quantity as to afford adequate compensation, and often, as in *this* case, the pecuniary circumstances of the inventor are such as to compel him to sell out his entire interest, in order to liquidate his indebtedness incurred in maturing his invention.

Judge Storow's test of "*at once* taking its place in the arts as a practical thing," with "*pecuniarily profitable* application," would almost certainly have deprived Roxanna Rice of the usufruct of

her deceased husband's invention, although it was ultimately conceded to be of "*great value.*"

JAMES D. SARVEN.

Sarven was the inventor of the so-called composite carriage-wheel (wooden spokes and felloes, combined with a metallic hub), which has now become so extensive and familiar an article of merchandise, through the length and breadth of the land, and which even constitutes a no insignificant factor in the great, growing, and profitable list of our manufactured exports. This source of wealth and credit owes its existence to our hitherto liberal system of patent grants, a system that will yet result in building up a great American commerce, if permitted to follow its proper and just development in the direction so auspiciously begun.

The Sarven wheel is an impressive illustration of an invention of now great and undisputed value, which, notwithstanding, would have probably become forfeit under the proposed schedule of progressive fees. In reference to this invention the Commissioner of Patents used the following language: "*The testimony shows that during the first eight or ten years of the life of this patent, the inventor spent almost his entire time, and devoted all his energies in an almost fruitless effort to induce carriage-makers to adopt his invention. It is only within the last four or five years that he has received any substantial income from it, although his efforts at introducing it were persistent, and his diligence remarkable, and he adds: 'The case affords an admirable illustration of the difficulty which inventors sometimes experience in introducing the most useful inventions, or in overcoming prejudices against their introduction.'*"

F. N. CLARKE.

F. N. Clarke was the inventor of a paste-board cutting apparatus, which is entitled to rank as a generic invention—for the Examining Board reported that they "entertained no doubt of the novelty and utility of the machine," and that "it was not intended as an improvement on any that were before known, but as a substitute for manual labor; accomplishing what had been previously effected by hand." Yet, of this device of

generic rank, the Board felt constrained to report, "there can be no question but that the patentee not only derived no pecuniary benefit from the invention, but that his exertions to introduce it into use brought him to *ruin*; so that *a few years* after the grant, on decease of the patentee, *his estate was declared insolvent*.

Would Mr. Storrow's test of "immediate," "practical" and "profitable" recognition have been just or expedient in the case of the family of F. N. Clarke? Would the utter inability of the estate of the dead and insolvent inventor—to pay the proposed further fee—have demonstrated the worthlessness of the invention?

ANTHONY COOLEY.

On the application of Ann M. Cooley, administratrix, for extension of the patent to Anthony Cooley, granted June 30, 1857, for improvement in Whiffle-Tree Hooks, the Commissioner said: "From evidence in this case it appears that Cooley, upon procuring his patent, sold out his drug business in which he was, at that time, engaged, in order that he might devote himself to the work of introducing his invention. He realized from the sale of his former business about \$1,500. This amount, and considerably more, was spent by him in the prosecution of his new new enterprise, without yielding him any income; and, in 1860, he died. His widow and administratrix was unable to procure parties to engage in the invention until the year 1867, when she entered into an arrangement with the Messrs. Fitch, of New Haven, to whom she sold the balance of the original term for fifty dollars. Yet such was the intrinsic value of the improvement that this firm, during the last year of the term of the patent sold **10,950 gross** of these hooks."

The extension was granted and realized the widow a comfortable maintenance.

Yet, under the proposed system of progressive fees, this patent would certainly have lapsed to the public.

WILLIAM KELLY.

William Kelly, of Lyon County, in the State of Kentucky, was the originator of a very important improvement in the manufacture of Iron. In reference to the status of this invention it will be sufficient, for most mechanics, to say that it was

deemed of sufficient importance to be contested by Henry Bessemer, of steel making celebrity, and that in this contest, over this particular improvement, priority was awarded to Kelly.

This invention constituted a radical departure of the very first-class, and will be recognized in its full plenitude of importance by a simple perusal of the claim, which is as follows: "Blowing blasts of air, either hot or cold, up and through a mass of liquid iron (the oxygen in the air combining with the carbon in the iron, causing a greatly increased heat and ebullition in the fluid mass), and decarbonizing and refining said iron without the use of fuel."

Bessemer, in ignorance of Kelly's invention, had hit on the same fruitful expedient, and had carried it an important step further, by suspending the converter on trunnions. To Bessemer, in a word, the public was indebted for the "actual, practical and pecuniarily profitable application." Moreover, he was an original although later inventor of the process in its entirety. Now, according to Storrow, the English inventor occupied—if any one could—the position of "a subsequent inventor who made a truly useful machine, and unconsciously used a feature already invented and patented by another." The Kelly invention falls under all the disqualifications enumerated by Mr. Storrow. "It had not gone into practical and profitable use;" and at the end of the fourteen years had netted its projector a loss of \$9,100. Mr. Kelly, being a man of some means, probably would have met the proposed periodical payments, thus enhancing his losses to \$9,250; but any one must see that this would have been no test at all of the value of the invention, but only of the pecuniary ability of the patentee.

Illustrations to the same purport might easily be made to fill a volume, but more space has already been occupied with this branch of the argument than we should think desirable, but for the necessity of confronting the specious positions of proponents *with the impregnable logic of facts*. A few more citations and we shall rest this part of the subject on the cases here produced—with the assurance that we do not pause for lack of material—and if gentlemen shall assert the inefficiency of that given, either quantitative or qualitative, we promise, like Elijah with the skeptical prophets of Baal, to pour on seven measures more.

Gentlemen, we can, and, if requisite, we will, bury you in facts!

PETER COOK.

Peter Cook was the inventor of a novel and valuable device for cutting veneers. His whole time was devoted to introducing it into use; his diligence was untiring. The Commissioner, in acting on this case, said: "His want of success has been without fault on his part, and has been owing to the many causes which so commonly prevent meritorious inventors from reaping the reward to which they are entitled. A strong prejudice was entertained against the machine for a long time, and it was only at a late period that its merit became established in the community.

"At an early date after obtaining his patent, the inventor, having no means to manufacture his machines, sold two-thirds of it to parties who undertook to set up the requisite works for that purpose and to introduce the machines into market. But they were encountered so strongly by the prejudices mentioned that all their attempts were defeated. They became discouraged and abandoned the enterprise, and left the patentee to meet their liabilities, which he did to a *ruinous extent*; and the title of two-thirds of the invention being in their hands, he was for a long time embarrassed in disposing of it.

"The patent was, in brief, a source of loss and embarrassment to the inventor almost to the end of its term." Would this have been a proper case for progressive fees?

JOSEPH KINGSLAND.

Joseph Kingsland was the inventor of a new and valuable method of manufacturing paper pulp. The proof before the Commissioner established the fact that pulp could be manufactured more expeditiously, cheaper and better, by this process and machine, than by any methods in use prior to its introduction; and that it is particularly valuable for making pulp from wood and straw, articles which have so recently come into demand for the purpose of paper making. It appears, also, from the inventor's statements, supported by ample proof, that he used due diligence to introduce his improvements and pushed their introduction to the extent of his power, and that, owing to lack of means, his machines costing from \$500 to \$700, and to competi-

tion of other machines, some of them attempted infringements, but most of which have failed and gone out of use, he had not been successful in getting his process and machinery very extensively adopted until within about two years preceding the termination of his original grant; but the invention was then coming into general favor and bid fair to supersede all the old means and methods.

OBED HUSSEY.

Hussey patented, in the year 1833, the scalloped knife or cutter, which, in conjunction with the open guard-finger subsequently devised and patented by him, finally solved the problem of the harvesting machine. One scarcely knows whether most to admire the extreme simplicity, one would almost say obviousness, of these contrivances, their admirable efficiency, or the length of time in which mankind waited and worked, seemingly in vain, for the solution of the problem. Yet, for some years after the invention and exhibition of the completed invention, so slow was the community to recognize the boon, that by the year 1850 the whole manufacture of reapers did not exceed a hundred or so.

In 1878, the manufacture of reapers and mowers, in the United States alone, is believed to have exceeded 200,000. Without these machines, the vast crops of this year would have rotted in the fields. It would have been utterly impossible to procure laborers enough to secure the crop by the old-time means.

Those who have followed this statement to the present point will be prepared to learn that the experiences of the father of the American harvesting machine was no exception to the fact, that

Great men have seldom had great recompenses.
Epaminondas saved his Thebes, and died,
Scarce leaving even his funeral expenses.
George Washington had thanks, and nought beside,
Save that all-cloudless glory which few men's is.

Upon procurement, in 1847, of the patent for his open guard, which unlocked the mystery of machine harvesting, Hussey proceeded to introduce the invention into general use, by sending machines into different parts of the country, and personally visiting most of the grain-growing States for that purpose. He also

attended agricultural fairs, to exhibit and explain his invention. He advertised extensively in periodicals devoted to agriculture, and in newspapers having a general circulation among farmers.

About 1853 he visited Europe. He thereby greatly raised the reputation of the machine and of American ingenuity, but became poorer. On his return from Europe, he devoted himself, with great assiduity, to the manufacture and introduction of his machine into use, and found demand for it greatly increased. His manufacturing business continued to improve until 1855, when he made 521 machines, the largest number he ever manufactured in one season; but he could not sell more than two-thirds of those machines, owing to the competition of others of far more ample manufacturing and pecuniary resources, who met him in every market, and sold his improvements without his license, and without compensating him. From this period, the competition of others having more capital and better facilities for manufacturing and selling than he had, completely paralyzed his business, so that his manufacture dwindled down, until in the year 1859 he made but ten machines, and in 1860 but 19 machines. Owing to the pirating of his invention, and the, to him, disastrous effects resulting, he, in the year 1856, took legal advice as to the course to pursue to protect his rights. He was recommended by counsel to surrender his patent for re-issue, with specifications and claims, more adequately stating his invention. This course he accordingly adopted, and his patent was re-issued in three divisions. By an oversight, such as is common, and, apparently, unavoidable in original specifications, the all-important opening at the rear of the guard was described and claimed as situated "on top" of the guard, whereas, in fact, it was soon found it would work, with at least equal effect, on the under side.

Certain manufacturers deemed they saw here an opportunity to evade the claim and acted accordingly. The surrender and re-issue—under the interpretation of the law made by tribunals—nollied all existing infringements, and trespassers had here an opportunity to escape scot free, but as they manifested no disposition to discontinue the trespasses, and in fact bid him defiance, he had no recourse but to enter into litigation or surrender all his dearly purchased rights, acquired at the expense of so much toil and so many sacrifices. A quarter of a century of the best

years of his life had slipped away and the goal seemed as far as ever from his grasp.

Having secured his thus amended patents he entered suit against the Honorable Cyrus H. McCormick, at that time the largest infringer of his patent. The suit was stoutly and persistently contested. A large amount of testimony was taken and the case argued for defense with extraordinary ability and zeal. Nothing that money or professional skill could fairly do to break down the patent was left undone. But the decision was finally rendered in his favor, the patent triumphantly sustained, and on his offering to license the parties they acceded and thereafter worked under his patent.

Hussey, in his application for extension, stated that many tried to evade his patent by using parts of the invention. That Messrs. Whiteley, Fassler and Kelly, and Andrew Whiteley, of Springfield, Ohio, appeared to be managers of a league against him; and that parties feared to take licenses of him, because of the expensive litigation which was rendered necessary to maintain the patent, so as to make the right of any pecuniary value, and justify the payment of the license fee. So onerous had these controversies been, that the patentee, near the close of the fourteen years of his second patent, and nearly thirty years from his invention of the scalloped cutter, testified, under oath, that "Litigation expenses had swallowed up all his profits." We thus find this great inventor, in the evening of his eminently useful life, like so many of his predecessors of the same inventive rank, in a condition little above destitution.

ELIAS HOWE, JR.

The story of Elias Howe, Jr. (the James Watt of the sewing machine) is best related in the inventor's simple narrative; he says: "I commenced the invention of my sewing machine as early as 1841, when I was twenty-two years old, and a machinist by trade; being then dependent upon my daily labor for the support of myself and family. I could not devote my attention to the subject during the working hours of the day; but I thought upon it when I could, day and night. It grew upon me till in 1844, I felt impelled to yield my whole time to it. I was then poor, but with promises of aid from my friend George

Fisher, I thereafter devoted myself exclusively to the construction and practical completion of my machine. I worked alone in the upper room of my friend's house, in Cambridgeport, Massachusetts. I finished my first machine by May, 1845. I soon tested the practical success, by sewing with it all the principal seams in two suits of clothes, one for myself and one for Mr. Fisher. Our clothes wore as well as any hand sewing. I have my first machine still, and it will now sew as good a seam as any sewing machine known to me. * * * *

My papers were filed as a caveat in the patent office, September 22nd, 1845. I completed my application for my patent May 27th, 1846, and at the same time conveyed one-half of my invention and patent, if obtained, to my friend Mr. Fisher, for five hundred dollars, in fact, though a much larger sum was named in the deed, on his suggestion. My patent was issued September 10th, 1846.

"I made a third machine [his second had been deposited as a model in the Patent Office], which *I tried to get into use* on terms satisfactory to myself and Mr. Fisher. After my patent was obtained, Mr. Fisher declined to aid me further. I then owed him about two thousand dollars, and I was also in debt to my father, to whom I conveyed the remaining half of my patent, for one thousand dollars, September 21st, 1846. *Having parted with my whole title, and being in debt, and having no means for manufacturing machines, I was much embarrassed, and did not know what to do.*

"My brother, Amasa B. Howe, suggested that my invention might succeed in England, where, if patented, it would be wholly under my control; and, on my behalf, with means borrowed of my father, my brother took my third machine to England, to do the best he could with it. He succeeded, November, 1846, in selling my machine and invention to one William Thomas, of London, to be used in his own business, for two hundred and fifty pounds in cash, and a *verbal agreement*, by Mr. Thomas, to patent my invention in England, in his own name; and, if it should prove successful, to pay me three pounds royalty on each machine made or sold under his patent. Mr. Thomas also agreed to employ me in adapting my machine to his work (making gaiter-boots, stays, &c.), at three pounds per week wages. Mr. Thomas obtained a patent for my machine in England, dated

December 1st, 1846, and I went to London, to enter his employ, in February, 1847. I then made several machines adapted to his work, with various modifications and improvements, for that purpose. Mr. Thomas having obtained his patent for my invention, and having received the benefit of my skill in adapting my machine to his peculiar kind of work, *ceased to be my friend, if he ever had been such, and I was discharged from his employment.*

"While working for Mr. Thomas, I had, at his request, sent for my wife and three children, and they had joined me in London. I had also, at Mr. Thomas' suggestion, endorsed a hundred pound note, on which I was afterwards sued and arrested; but I was finally released on taking the poor debtor's oath.

*"By small loans from my fellow mechanics and by pawning what few articles the English law allowed a poor debtor to keep, I managed to live with my family in London, until, through friendly representations from some American acquaintances I found there, the captain of an American packet was induced to take my wife and children home to the United States upon credit; and they sailed for New York in the winter of 1848-49. I was then **alone** and extremely poor, in a foreign land. My invention was patented and in successful use in England, but without any profit to me and wholly out of my control. I could do nothing to enforce my rights against Mr. Thomas, who had ample means, and I had none.*

"In the spring of 1849, indebted to a Scotch mechanic for a steerage passage home, I returned to the United States, poorer, if possible, than when I left.

*"On my return I found my wife and children very destitute; all their personal effects, except what they had on, being still detained to secure the payment of their passage home. **My wife was sick, and died** in ten days after my arrival.*

[**"UNCONSCIOUS USERS."**]

*"During my absence in England a considerable number of sewing machines, embracing my invention, had been made and put into operation in different parts of the United States; some of them by the procurement of Mr. Fisher, or under rights derived from him, but *most of them without such right, and being clear infringements of my patent.*"*

Mr. Howe then relates how—having obtained an agreement

from his father in the summer of 1849 to re-convey to him the half interest in the patent—he tried to induce Mr. Fisher to join him in enforcing his patent against infringers who would not pay for it—and how Mr. Fisher declined doing so—and how such declination, coupled with his own “well-known poverty and embarrassment,” emboldened these parties to refuse “any satisfactory settlement.”

We have now reached the darkest hour in the experience of an ill-used hero and martyr. Eight weary years had slipped away, and we see this benefactor of his age and country penniless and sunk in debt, with his three motherless children. It is remembered that he found his young wife sick on his return to his native shore and that she died ten days after his arrival—that she and the little ones were destitute, and that she had been unable to redeem their scanty wardrobe, held as security for their passage money. We are not informed of the nature of his wife’s sickness, but who can doubt that it was in great part due to her privations and anxieties, the cruel bitter fruit of all their high aspirations and devoted sacrifices?

’Tis the vile daily drop on drop that wears
The heart out, like the stone, with petty cares.

Four years had passed since the young, just-married, Cambridgeport machinist proudly carried his model to Boston for the purpose of procuring a patent, and at this period of the sad narrative, it is now in the year of grace 1849, (at the very Egyptian midnight of Elias Howe, Junior’s, troubles) that brother Storrow would have had the nation that has pocketed a million dollars of its inventors’ hard earnings, and derived untold wealth from Howe’s invention, present its demand for his money or the life of his patent!

Howe adds:

“At the time when I obtained my patent I was wholly inexperienced in business transactions of any kind; and I had no conceptions of the usual practices of unscrupulous speculators in or infringers of patent rights, of which, however, I have since had bitter experience.”

Even after the lapse of fourteen years from the time when he took his model to Boston, and nearly nineteen years from his first labors on the invention, Howe writes:

"I have hitherto failed to obtain any compensation for my invention from Mr. Thomas, in England, though he has recovered heavy damages there against infringers, and has already realized a large income for licenses, at a high royalty, under his patent for my invention, and I am now advised that my claim against him must be maintained, if at all, by a long and expensive suit at law, of doubtful result.

JETHRO WOOD.

On July 1st, 1814, Jethro Wood received his patent for the Cast-Iron Plow, which was so largely instrumental in making agriculture possible in the early settlement of the Western States. This is an invention of great and acknowledged value; insomuch that a bill passed the House of Representatives, July 7th, 1870, "For the Relief of the heirs of Jethro Wood, the Inventor of the Modern Plow." This bill, which never became a law, is worded as follows:

"Whereas, Jethro Wood, of Cayuga county, New York, the inventor of the Cast-Iron Plow, now universally used in this country, died in poverty, after devoting his fortune and his life to the introduction of his art: And, whereas, few men have conferred a greater benefit on mankind than he did, by the invention and practical application of this improvement:" Then follows the appropriation of twenty-five thousand dollars to his heirs; a donation which, to this day, they have never received.

ELI WHITNEY.

Eli Whitney, of Massachusetts, while teaching school in Georgia, devised the cotton gin; the invention which has long been accredited, and truly so, with giving rise to the production of our greatest export. The device was, of course, patented, but was so persistently and shamelessly infringed, that the inventor never realized any profit. Whitney patented the cotton gin in 1793. He received, on account of the invention, about \$50,000, every cent of which was spent in defending his patent, so that actually he was, himself, benefited not one iota by his invention, but infinitely harmed, because it wasted, without remuneration, the best years of his life.

An eminent attorney, Mr. Seth C. Staples, in an address

before a federal tribunal about thirty years ago, remarked: "I recollect, very well, when I was a small boy, my mother purchased raw cotton for 2s. and 6d. per pound, and I used to help her pick it winter evenings. Now you can purchase an article, picked as clean as is possible, for 6 cents per pound. I, myself, heard Mr. Whitney say, when riding through the country, just before his death, when he was laboring under the disease which he had contracted while endeavoring to maintain his rights, that he would never advise any man afterwards to take out a patent.

Whitney's difficulties in enforcing his rights were rendered more onerous by the avowed prejudice against patents, entertained by the tribunals of that day.

The experiences of Whitney constitute an admirable typical case. The cotton gin suddenly supplanted the labor of thousands of hands; it absolutely destroyed an industry which occupied nearly whole populations during a large part of the year; but what was the effect upon the people? In eight short years following the introduction of the gin the production of American cotton rose from 130,000 pounds to 18,000,000 pounds. In 1792 the quantity of cotton which a planter could raise was limited to the quantity which his hands could pick the seed from. A man could cultivate an hundred fold more than he could pick the seeds from between harvest-tide and planting. The cotton gin relieved him from the labor of seed picking and enabled him to devote his labor to cultivation alone, with the result above noted. During the ten years from 1800 to 1810, the production rose from 18,000,000 to 90,000,000 pounds. By the year 1859 the annual production of American cotton had reached 2,441,000,000 pounds—more than 16,000 fold the yield of 1792!

By 1810 the market price of cotton had fallen one-half; yet, so remunerative was the business, that the planters of Maryland and Virginia experienced a fever of migration to the South, to engage in the cotton culture, similar to the gold excitement of 1849.

This great industry and source of wealth, which gave cheap clothing to the people, and which, without exaggeration, gave to cotton the title of "King," was mainly attributable to an invention out of which the inventor was not enriched one cent.

ALPHEUS C. GALLAHUE.

The shoe-pegging machine, without which the important inventions of Sturtevant would have been useless, and, in fact, would never have been made, is supposed to be among those stigmatized by proponents (see pretended answer to Mr. Hubbell's question, page 437, S. Mis. Doc. No. 50) as "worthless patents which stand in the way of inventors themselves, and which it is for their interest that they shall be gotten out of the way." This patent was one of the kind which proponents are fond of calling "defunct." Such, however, was not the opinion of the court; for (as reported in 6 Fisher, case of *Gallahue v. Butterfield, et al.*), the Gallahue patents, three in number, were completely sustained, and every one of them declared to be infringed by the defendants. Gallahue had exercised the customary diligence in endeavoring to get his machine introduced, and "failed because of the great prejudice existing against machine-made shoes, by manufacturers and laborers." His expenses at the termination of fourteen years had been \$3,732.50, and his receipts \$3,103.33, leaving \$629.17 net receipts.

The case of Alpheus C. Gallahue illustrates the danger of estimating the value of an invention by the ability of the patentee to make it pecuniarily available to himself, or of asserting that, because the patent has not been a business success, the invention is "defunct."

While it may be admitted that the successful inventor is sometimes but the winner of a race, in which, had he failed, another would have accomplished the result. Yet, it is also true, that had there been no goal, there would have been no race.

NELSON GOODYEAR.

One of the most important and characteristic of American manufacturers is that of India rubber goods. Heywood, the original projector of the process known as vulcanizing—having spent years, and his last shilling without reaching a satisfactory result—finally made over his interest to Goodyear. Goodyear spent years and years—in which his family were frequently almost at the brink of starvation—and only achieved the success of which all the world knows, when past the prime of life, and

long after years in which his circumstances had been reduced to a strait that would have caused any one but an inventor to despair.

Commissioner Holt, in his decision on this case used the following language: "From the first moment that the conception entered his [Goodyear's] mind until his complete success—embracing a period of *from sixteen to eighteen years*—he applied himself unceasingly and enthusiastically to its perfection and to its introduction into use, in every form that his fruitful genius could devise. So intensely were his faculties concentrated upon it that he seems to have been incapable of thought or of action upon any other subject. He had no other occupation, was inspired by no other hope, cherished no other ambition. He carried continually about his person a piece of India rubber, and into the ears of all who would listen he poured incessantly the story of his experiments, and the glowing language of his prophecies. He was, according to the witnesses, completely absorbed by it, both by day and night, pursuing it with untiring energy, and with almost superhuman perseverance. Not only were the powers of his mind and body thus ardently devoted to the invention and its introduction into use, but *every dollar he possessed or could command through the resources of his credit, or the influences of friendship, was uncalculatingly cast into that seething caldron of experiment which was allowed to know no repose.* The very bed on which his wife slept, and the linen that covered his table, were seized and sold to pay his board, and we see him, with his stricken household, following in the funeral of his child, on foot, because he had no means with which to hire a carriage. His family had to endure privations almost surpassing belief, being frequently without an article of food in the house, or fuel in the coldest weather; and indeed, it is said that they could not have lived through the winter of 1839 but for the kind offices of a few charitable friends. They are represented as gathering sticks in the woods and on the edges of the highways with which to cook their meals, and digging the potatoes of their little garden before they were half grown, while one of their hungry children, in a spirit worthy of his father, is heard expressing his thanks that this much had been spared them. We often find him arrested and incarcerated in the debtor's prison, but, even amid its gloom, his vision of the future never

grew dim, his faith in his ultimate triumph never faltered. Undismayed by discomfitures and sorrows which might well have broken the stoutest spirit, his language, everywhere and under all circumstances, was that of encouragement and of a profound conviction of final success."

In 1855 he appeared at the World's Fair in Paris, where the Golden Medal and the Grand Cross of the Legion of Honor were awarded to him, as the representative of his country's inventive genius. Fortune, however, while thus caressing him with one hand, was, at the same moment, smiting him with the other; for we learn from the testimony, that these brilliant testimonials passed from the Emperor and reached their honored recipient, then the occupant of a debtors' prison, among strangers and in a foreign land; *thus adding yet another to that long, sad catalogue of public benefactors, who have stood neglected and impoverished in the midst of the waving harvest of blessings they had bestowed upon the race.*"

"Throughout all these scenes of trial, so vividly depicted by the evidence, he derived *no support from the sympathies of the public*. The community at large seem to have looked on him as one chasing a phantom; there were times when even his best friends turned away from him as an idle visionary, and he was fated to encounter, on every side, sneers and ridicule, to which each baffled experiment and pecuniary loss inflicted, added a yet keener edge. The mercenary, naturally enough, pronounced his experiments, so freely made, culpably wasteful; the selfish and the narrow-minded greeted the expression of his enlarged and far-reaching views, as the ravings of an enthusiast; while it is fair to infer, from the depositions, that not a few of the timid and plodding who cling tremblingly, apprehensive of change, to the beaten paths of human thought and action, regarded him as wandering on the very brink of insanity, if not already pursuing its wild and flickering lights. *Such, in all times, has been the fate of the greatest spirits that have appeared on the arena of human discovery; and such will probably continue to be the doom of all whose stalwart strides carry them in advance of the race and generation to which they belong.*

"Even after his completion of the invention, capitalists shrunk away from the discovery so confidently announced, as a chimera, and manufacturers, who had suffered so deeply by the India

Rubber business, denied it their confidence. Its practicability had to be demonstrated by a long series of illustrations which the total want of experience rendered protracted and often ruinously expensive. Every inch occupied in the enlarging field of its usefulness had to be conquered by many sacrifices, while of the Protean formed applications to which it was destined to attain there was not one that did not involve an outlay of treasure, of toil and of high artistic skill. All these from the beginning to the present hour have been unceasingly bestowed upon it."

The entire decision of Commissioner Holt is well worth an attentive perusal and will be found remarkably pertinent to the questions involved in this controversy, if controversy it can be called when so far the advocates before the Committee of the proposed changes have had nearly all the talk to themselves. In regard to the elements of time expended and difficulties encountered in every invention of the first class, and its value relatively to subsequent improvements, the honorable Commissioner says: "It is extremely difficult to estimate in the coin of dollars and cents the worth of *eighteen years of the prime of human life*—especially so when that life is one of lofty genius, of indomitable enterprise, and of stainless virtues. It is, however, about that period of precisely such a life that has been consecrated to the pursuit and development of this discovery, nor could a shorter period of time have sufficed for the arduous and perplexing task. Throughout those busy and toilsome years it is apparent that there has been no compromise with the suggestions of avarice, or with the claims to self-indulgence and ease. It has been already fully shown that the applicant's fortune, his health, the comforts of his family, the freshness of his early, and the patient energies of his later manhood, have all been unhesitatingly melted down in the crucible of this enquiry, and he is now seen tottering toward that grave which must soon open in his path, with nothing left of the heroic and athletic man but what remains of the maimed and scarred soldier on the battlefield, a wreck which every great and generous people has taken fondly to its bosom. The time of the indolent, the selfish, the dissolute and the dull is little worth to the world which they rather cumber than bless with their presence; but the time of the gifted, the brave, the philanthropic, and unconquerable sons of genius, has for mankind a value which we should but feebly

express in the arithmetic of dollars. * * * What that time and ingenuity have yielded to the public is the true test of their value, alike to that public and to the inventor; for *what the former have received the latter must, upon every principle of sound logic, be held to have parted with.* * * *

"It has been assumed, as a means of avoiding the force of these estimates, that the applicant is entitled to receive from the public, not what the invention is now worth, developed and established as it is, but what it was worth when the patent issued. This view has been urged with much persistence and plausibility, but it has not impressed me as liberal or sound. When the invention came, timid, and struggling into existence, meeting in every quarter with scoffs and distrust, had it been offered for sale in the market, it would probably have commanded a few thousand dollars—possibly less. [Analogy with similar cases justifies the belief that Goodyear would have had to purchase, rather than sell, the privilege of release from both ownership and liabilities]; but to say that its value is to be measured by what it was then considered to be worth, would be to determine that the tree is to be judged rather by the green, than by the ripe fruit found upon its branches. The present expanded and prosperous condition of the invention, is mainly owing to the genius and unceasing struggles of the applicant, and he may justly reap what he has sown and so diligently cultivated. In the adjustment of machinery to accomplish the ends so distinctly pointed out by the inventor, and in the manipulations of the gum and treatment of the fabrics in the various stages of their manufacture, it is admitted that many improvements have been made by skillful mechanics and operatives, and those have their utility and importance; but to allow such labors to rival or depreciate the claims of the applicant, would be to rank the simple plowman of the fields with that sublime and beneficent Providence, which creates alike the soil out of which the harvest springs, and the sunshine and the shower by which it is nurtured and matured."

Commissioner Hoyt possessed the singular merit, for a Commissioner of Patents, of believing heartily and unreservedly in the mission, and importance of invention—especially of invention in its generic phases. The concluding passages of his decision, are so pertinent in their application to the present effort before Congress, to draw the lines more tightly around

the already hard lot of the original inventor—are moreover such excellent reading—that no apology is needed for giving them in full. The manoeuvres of Goodyear's chief opponent can not fail to remind the reader of the similar and, unfortunately, more successful hostility of Cort's antagonist, Homfrey—and of the yet bolder attempt of the Boston Shoe and Leather Association, who, failing before the judicial tribunals, have the effrontery to ask that the law of the land be changed to suit, what they choose to think, their interest in the premises. In reference to this class of persons, the Commissioner says:

“Another and most potent reason why this patent should be extended, is found in the acknowledged fact that the public have not kept the faith which they plighted, with the applicant, when he consented to surrender to them a product, which was in effect, the concentrated essence of the physical and intellectual energies of his entire life. That public stipulated with him that he should peaceably enjoy for fourteen years the monopoly created by his patent, and had he been permitted to do so, he would, no doubt, long since have realized an ample remuneration; but, so far from this having been the case, no inventor probably has ever been so harrassed, so trampled upon, so plundered by that sordid and licentious class of infringers known in the parlance of the world, with no exaggeration of phrase, as “pirates.” The spoliations of their incessant guerilla warfare upon his defenseless rights have unquestionably amounted to millions. In the very front rank of this predatory band stands one who sustains, in this case, the double and most convenient character of contestant and witness; and it is but a subdued expression of my estimate of the testimony he has lodged, to say that this Parthian shaft—the last that he could hurl at an invention which he has so long and so remorselessly pursued—is a fitting finale to that career which the public justice of the country has so signally rebuked.”

“Important as are, to the parties to this issue, the immediate consequences bound up with it, they are insignificant indeed as compared with the value to the public of the principle involved. *From the very foundation of this government, it has been its settled policy to secure a just reward to all inventors, and it is to the inflexible maintenance of this policy that we are indebted for the unparalleled advancement, which, as a people, we have made in the useful arts. All that is glorious in our past or hopeful in our future is indisso-*

lubbly linked with that cause of human progress of which inventors are the preux chevaliers. It is no poetic translation of the abiding sentiment of the country to say that they are the true jewels of the nation to which they belong, and that a solicitude for the protection of their rights and interests should find a place in every throb of the national heart. Sadly helpless as a class, and offering, in the glittering creations of their own genius, the strongest temptations to unscrupulous cupidity, they, of all men, have most need of the shelter of the public law; while, in view of their philanthropic labors, they are, of all men, most entitled to it.

“At the close of all his toils and sacrifices, and of the humiliation he has been called on to endure, this public spirited inventor, whose life has been worn away in advancing the best interests of mankind, is found to be still poor, oppressed with debt, and with the winter of age creeping upon his shattered constitution. It is perfectly manifest that this is in no degree the result of vice or of improvidence on his part, but is an inexorable consequence of the impoverishing experiments inseparable from the prosecution of his great enterprise, and of that prolonged and exhausting strife in which unscrupulous men have involved him.”

PROPOSED RESTRICTIONS UNNECESSARY.

With Nelson Goodyear we close our citations of facts in disproof of the implication that the inventor of a valuable improvement is, in any fair sense, or as a matter of course, master of the situation; that it is proper, expedient, or just to impose a special tax on him; or that the proposed additional impost would afford any test whatever of the value of the invention, or even of the inventor's estimate of it. Even were the instances quoted exceptional, and not, as they really are, typical, it is believed that they would be enough to justify grave deliberation, whether some more equitably working plan than that proposed is not possible. In plain fact, however, the law as it now exists, *is*, to a great extent, effective in the direction sought. Just look at it. First, the application must undergo the sifting of the Examiners specially appointed, and well-informed in the specialty to which the alleged invention pertains, and even after grant, the patent is

assailable in all respects in any court in which it may be brought by the patentee or his representatives. Gentlemen well know that not a year passes in which patents are not virtually vacated by the refusal of courts to give them legal effect. That such instances are exceptional, is surely no cause for regret, or that, under our wise and beneficent system of examination, patents should so generally pass, unscathed, the fierce light of judicial investigation as now conducted.

Inasmuch as it is by proponents' own admissions, only these litigated patents, that their clients fear or, in fact, care anything about, it seems difficult to see what more is wanted than to give full effect to the modes of action already provided for.

For an insignificant fraction of expenditures of litigation, manufacturers and railway associations might keep informed of improvements, and secure in their incipency, and at a comparatively small outlay, devices of vast benefit to themselves, their employes and customers. Such an examination of the official record, as would be sure to precede a transaction in realty, would prevent "unconscious use" of features that were the property of another.

Proponents admit the danger of pronouncing too dogmatically against an invention, on the ground of frivolity, and quote the competent testimony of James Watt, that even "failures have their uses." The act of invention, in fact, bears no inconsiderable resemblance to nature's process in scattering the germs of organic life. Time, only, and experience can determine what shall take root and bear precious fruit, perchance some sixty and yet other some an hundred or a thousand fold. It is, therefore, advisable, after such scrutiny as a well conducted examination can give, to let both grow together until the harvest, lest, in attempting to root up the tares, the wheat be also rooted up.

As for patents for inventions deemed trifling, or for devices which seem scarcely to proclaim the exercise of the inventive faculty, we quote from the able testimony of John Farey, Esq., before a committee of the British House of Commons in the year 1829. The English Government, then as now, granted patents for any device whatever that an applicant described in proper legal phraseology and for which he paid the prescribed fees, and, the proof is notorious, granted and yet grants patents for the same thing over and over again; and as a consequence,

McCulloch, the well-known publicist, has the following remark [Commercial Dict., page 275]: "Considering the authority under which [English] patents are granted, can any one wonder at the number that have been overturned in the Courts of Justice? or at the litigation to which they have given rise?" And yet of such patents Mr. Farey could say as follows [page 34]: Question—"Do you consider a more easy mode of setting aside patents should be adopted?" Answer—"I think they need nothing more than to let them die a natural death, which they do without any process at all."

However, it is believed little need be said, pro or con, as to these harmless sorts—because it is not with such that our friends' clients have any controversy—but only such as possess "a feature" which they "unconsciously use" and for which they have an objection to consciously *paying*.

GERMINAL INVENTIONS.

A late report of a Commissioner of Patents regrets the "unavoidable grant of patents for inventions more or less crude, for machines capable of operating mechanically, but not capable of profitable operation and not valuable commercially," and that "these patents sometimes lie dormant until, in the progress of the arts, and by the efforts of more practically successful inventors, the goal is ultimately reached and inventions are perfected and made practically useful, in which, however, are embodied the germs found in some of these old patents." The gentleman concludes by lending the weight of his official position to the project of periodical fees as a remedy for what he is pleased to consider a wrong, and as he makes no suggestion of abating the application fee we are bound to infer that he would increase the aggregate mulct by the sum of the additional duties.

The proposition carries its own answer. Every great invention is a matter of growth; at first, slow and feeble; afterward, as "*the germ*" reaches recognition or more favorable environments, more rapid, more pronounced and more available. The first stages are necessarily more or less "crude" and halting. To condemn these embryos for immaturity is to re-enact the role of Pitt's assailant who accused him of extreme youth! But as Wordsworth said of individuals, so it may be said of inventions—

the boy is the father of the man. That later comers, profiting by the misadventures of the pioneer who blazed the first track, should achieve results more commensurate with public requirements—perhaps secure public recognition at all—is to be expected. Would it not be very surprising were it otherwise? Says Samuel Smiles: "By slow, and often painful steps, Nature's secrets have been mastered. Not an effort has been made but has had its influence, for no human labor is altogether lost; some remnant of useful effect surviving for the benefit of the race, if not of the individual. Even attempts apparently useless have not really been so, but have served, in some way, to advance man to higher knowledge, skill or discipline. A single step won gives a firmer foothold for further effort." Man in his early inventive essays, oft-times, like the infant, learns to walk by stumbling. A policy that would ignore the seemingly abortive efforts or slight successes of the earlier explorer, betrays a superficial and unworthy appreciation of the principles that underlie and are inseparably interwoven with all human progress.

THE PATENTEE AND THE PUBLIC AS CONTRACTING PARTIES.

To secure a valid patent, such as the courts will sustain, the applicant is required to have invented a useful novelty capable of actual service. He is also required to prepare a model within certain prescribed dimensions, and to prepare and "file in the patent office a written description" of "the manner and process of constructing and using it in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make, construct and use the same." He is further required to "explain the principle thereof, and the best mode in which he has contemplated applying that principle so as to distinguish it from other inventions," and to "particularly point out and distinctly define the part, improvement or combination which he claims as his invention or discovery." He is also required to prepare and file an accurate and artistic drawing (marked with letters of reference) on a prescribed material and of prescribed dimensions. Finally, he must make oath to the invention and pay the prescribed fees.

He must, in brief, before his right to his own discovery can receive legal recognition, prepare, at his own trouble and cost, and place on record so complete a revelation of the invention as to give the world, for all time thereafter, full possession of his secret.

Having complied with all the above recited requirements to the satisfaction of the patent office (which is often only reached after numerous amendments, and not infrequently after a costly and tedious interference with a rival applicant), the patentee has discharged *his* part of the contract *absolutely and completely*. For the brief tenure of his franchise, his right of possession should be respected in just so much as he has given to the world—no more, no less. Interest will impel him to make it useful to himself and others at as early a period of his short franchise as possible. No sane man would incur the risk, trouble, expense and publicity of a patent for that which he designed to hide away in his cellar. But he is under no obligation to operate his invention. Whether he does so or not is nobody's business but his own. He is as free to use or neglect means to make it productive as is the owner of a mine or a field. Indeed his tenure in the creature of his genius rests on higher ground than can be truly asserted for possession of things already in existence; while the extreme brevity of his occupancy is a guarantee against the evil effects that sometimes accompany unproductive or mischievous possession in perpetuity.

To speak of such a franchise as "standing in the way" of later improvements, and to ask a change in the laws for the express purpose of "killing it," is as if the builder of a house should complain of, and desire to legislate out of existence, the right of another to the ground on which that house was erected.

AMERICAN AND ENGLISH SYSTEMS COMPARED.

The instances cited, and even the testimony of the more intelligent of the proponents, including Messrs. Smith and Storrow themselves, show that

Relatively to the system of granting patents, which obtains here, that of England, does not "work well enough," as stated by Mr. Storrow, but *badly*; by excluding ingenuous poverty; by setting up a false, unjust, and mischievous test; by inexcusably

adding to the already too onerous burdens of radical invention ; by imposing a tax on inventors, as such ; by making the legal recognition of intellectual property a means of revenue, and by defeating or impairing the avowed purpose of the Constitution, that of “*promoting* the progress of science and the useful arts, by securing, for limited times, to authors and inventors, the **exclusive** right to *their* respective writings and discoveries.” This wisely framed clause recognizes the inherent “*right*” of the brain-worker to the product of his ingenuous toil, and merely instructs the legislature to “*secure*” him in that already existing right ; and that for the single purpose of *promoting* the progress of science and the useful arts. Common sense, and the best authorities, concur in restricting the right or power of Congress to tax applicants for patents, to the expenses incident to the grant.

Can any unbiased reader of the story of Nelson Goodyear assert that the proposed imposts at the expiration of four and nine years respectively would not have imposed a cruel burden upon this over-taxed inventor, and have probably vacated the patent ; and this conceded, will he dare to say with Judge Storow that such a measure “will only cut off those which, after trial have been practically abandoned as worthless?”—(See page 156.)

How could Mr. Storow’s colleague, Mr. Chauncey Smith, in view of this and scores of similar cases : nay, after himself reciting the similar experiences of James Watt, how, we repeat, could Mr. Smith, in the face of these sadly monotonous annals of almost every pioneer in invention, stand up before the Committee and give the answers which he did.

The CHAIRMAN—“You think, if it is valuable to the public, he certainly ought to be able to pay it?”

Mr. SMITH—“Yes, sir.”

This witness does not think it would have been “onerous” for Nelson Goodyear, for example, at the expiration of nine years—which was about the time he occupied a debtor’s prison—to pay the hundred dollars he did not possess, for the invention of his own begetting, to a community which was his unspeakable debtor. The witness thinks that if valuable *to the public*, the inventor “certainly ought to be able to pay for it.” The logic is admirable—the invention is valuable to the public, *ergo*, the inventor, whose genius and labor have evolved it out of nothing, “ought to be able to pay” the public, to whom it is

valuable and who have never lifted a finger in its aid. Yes, Mr. Witness, he *ought* to be able to pay for it. The witness, who is a shrewd business man, finds himself able to exact pay for *his* services, even of a shoe and leather association, and can pay for what he wants; *ergo*, the inventor ought to be able to do the same. Nelson Goodyear ought to have been able to pay it—it was valuable to the public—but the public, as usual, was wedded to its accustomed rut, and would have none of it; *least of all would it pay for it*. It was really wrong of Nelson Goodyear to be inspecting the cell of a debtors' prison instead of discharging the obligation of paying for that which was his own by a claim quite as sacred as that of the heir to a piece of real estate: that his claim is as sacred and inalienable as here asserted, is the emphatic declaration of the same Professor Tyndall endorsed by the witness in a previous part (page 266) of his testimony. [See testimony of Professor Tyndall before Parliamentary Committee, in Appendix.]

INCONVENIENCE OF PERIODICAL FEES.

A not yet mentioned but most serious objection to the proposed changes may be stated as follows: Of those American patents which enter the market a large majority are disposed of territorially. This mode of disposition suits the wants and habits of the contracting parties, or could not have reached such general adoption. Now see what disturbance will be created in the system by the periodical fees: How are all the many purchasers of local rights—State, county, shop, &c.—to unite in paying their respective quota of the deferred fees? How can they be sure that the patentee will be able and willing to pay them at the set times? No such assurance is possible—what follows? Either the patentee must, in advance, pay up the entire dues, which all familiar with inventors, as a class, know that only a few exceptionally wealthy individuals can afford to do, or he must forego the mode of territorial disposal of his right. But this is not all; for the same causes will prevent the partition, now so common, in undivided fractions—they will even be fatal to the mode so often resorted to, by which alone very many of the best inventions have been made possible, in which the funds required to develop and patent the invention have been procurable in consideration of an interest in the same. The

extreme relative onorourness of the conditions will manifestly deter many from asking the protection of patents, an obstruction which—it is as certain as a proposition in Euclid—will in turn operate to nip invention in the bud. This will act injuriously in many directions. It will discourage and suppress the efforts of struggling genius which enlightened communities are most solicitous to foster and encourage.

The injustice and folly of such policy—this treason to the best elements of human progress—will swell the ranks of the disaffected and convert into enemies some who might have become society's chief ornaments and saviors.

By artificially exalting mere money-power, at the expense of productive, and especially of creative, industry, the worst possible example will be set to the young, the irresponsible and the disaffected.

By causing a congestion of the forces which now expend themselves naturally and healthily in the constantly widening avenues of intelligent activity, the proposed measures will be changed to a social poison—will breed bad blood, disorder and crime.

By greatly reducing the number of applications for patents, on the principle of an excessive tariff, they will cut down the revenue of the Patent Office and oblige a reduction of the machinery of preliminary examination—unless Congress should so far reverse all its antecedents as to eke out the expenses of the bureau from the public revenue.

The Examining force being thus impaired, our system will be brought into still closer analogy with that of England, which some find it convenient to laud!

Even those dull souls who would abolish patent grants would be among the greatest sufferers, albeit unwittingly, on the same principle that one born blind is ignorant of the measure of his loss in the deprivation of sight.

IS IT A TAX?

“Make a bridge of gold for a retreating foe,” says the military proverb. It can not, perhaps, be said that our fathers made such a bridge for their advancing friend, the inventor;

but we can truly say that—in removing some of the obstructions that beset his path—they made a bridge of gold for us.

Gentlemen now propose to draw the lines tighter around the inventor, by what they are pleased to call “a statute of repose”—of repose—for whom? For the patentee? No! For the legitimate licensee or purchaser? No! For the unauthorized user? Yes; and, without even reserving the right of minors, widows and absentees; they propose to further embarrass the inventor by stepping between him and his grantees, and by determining the contract value of his franchise!! And that notwithstanding that the constitution makes the right an **exclusive** one. They further propose to embarrass the inventor, by putting it in the power of corporations—without even exaction of a bond—(vide Sections 3 and 9) to ruin him on sight. Finally, they propose to place “a restriction in the conditions imposed upon the license.”

Consistent with proponents’ European idea, that the patentee is the recipient of a favor, General Leggett says: “Government may grant patents for one year, or two years, or five years, or fifty years,” because “the Constitution provides that patents shall be granted for a limited time;” but the Constitution as authoritatively states the **object**, to wit., the “*promotion* of the useful arts.” This is the *sole* purpose; ties the hands of the legislature, and obliges it to ascertain **what** limited time, while “*promoting the progress of the useful arts*,” will, in the long run, form the most equitable adjustment between the two contracting parties, the inventor and the public. This ascertained—Congress is bound to respect it; and the expense to the patentee should be merely administrative; only such as is required to entertain, define, and record the metes and bounds of the franchise. Congress has no authority to exact an impost as the price of its recognition of the inventor’s rights in “*his* invention.”

Senator Morgan enquires whether the additional mulct is any more than a “restriction upon the license you [the public] give.” To which General Leggett experiences no difficulty in responding: “The taxing power is not invoked at all. It is a restriction in the conditions imposed upon the license.”

SENATOR MORGAN—“It is not a tax?”

MR. LEGGETT—“It is not a tax.”

Gentlemen, **What is it?**

INFLUENCE OF THE PATENT SYSTEM ON AMERICAN EXPORTS.

As to the increase and the now rapidly growing supremacy of many American manufactures, their successful invasion of foreign markets and the part attributable to United States patents in creating this encouraging condition of things, we possess many emphatic testimonials. For example, Judge Storrow, in his argument, remarked:

"In the long run, every one will buy of the manufacturers who manufacture the cheapest. It appears from the exports and imports of this country that we have been *steadily gaining on England* in this respect. * * * Since 1850 the manufactured articles have increased faster than the raw materials in our exports, and it is matter of common knowledge among those engaged in industrial pursuits, that, unless loaded by duties on raw materials, *we have now come to the point when we can compete with England in large classes of our manufactured products.*

"With England and France it has been just the other way. Their exports of manufactured articles have decreased; their imports of manufactured articles have increased. [Storrow, p. 88.]

"**The improvements of our machinery have been affected by our patent system out of all proportion to the manner in which the patent system of England has affected their industries.** *Our patent system has been made cheap and popular, and has reached every workman of inventive mind,* for the number of patents granted shows that it reaches almost every workshop in the land.

"*The increased growth in industrial progress which I have shown you in this country and as compared with England, has coincided with the period during which we have surpassed her in granting patents.* [Storrow, p. 89.]

We have got within the last year, some very interesting testimony, from foreign sources, as to the value of the [our] patent system. *In England, their system, though theoretically, perhaps, not bad, yet practically it has not been what we consider a good patent system.* That is to say, *the expense of taking out patents is great, the expenses of litigating are enormous, and, more than that, the system has not become popularized so as to reach the working class.* The habit and tone of mind among the large

manufacturers, with some notable exceptions, has been to discourage their workmen from taking out patents, and the consequence is that, with a manufacturing population larger than ours, they take out about 3,500 patents instead of 13,000 patents; and they find, as a consequence, that *they do not get inventions and improvements as we do.* (Storow, page 94).

Sir William Thompson, on his return from our Centennial Exhibition, told the section of Steam Engineering of the British Association, of which he is president, that unless the countries of Europe speedily amended their patent laws, and unless they amended them in a *contrary direction* to the bill pending in Parliament, they must understand that *they would lose their manufacturing supremacy, and that America would take it from them.* (Storow, page 94).

[Yet this is the direction in which Mr. Storow would "amend" our law!]

Mr. St. John V. Day, discussing a bill in the British Parliament, similar to proponents,' and declaring that, *unless they (the people of England) improved their system so as to give more general encouragement to inventors, they would lose their manufacturing supremacy,* and, **with that, would give up their commercial supremacy,** for that depended on their ability to cheaply supply neutral markets; and, after an interesting discussion, the association resolved that a committee be appointed to procure changes in the law, so that it might be more favorable to inventors. The consequence has been that only last June the government withdrew their pending bill. (Storow, page 95).

Mr. Hulse, the English judge of textile machinery at the Centennial, says:

"As regards extent of invention and ingenuity, the United States was far ahead of other nations. * * * The extraordinary extent of ingenuity and invention in the United States, and manifested throughout the exhibition, I attribute to the natural aptitude of the people, fostered and stimulated by an *admirable patent law and system,* and to the appreciation of inventions by the people generally.

"England took the lead in time, and her patent law gained much the start of this country and of France; yet *this country, by the character of its law, which not only gave the most effectual*

protection to property in inventions, but placed the expense of obtaining patents so low that the poorest inventors could secure the protection of a patent, has reaped greater benefit relatively than England. (Mr. Chauncey Smith, p. 260.)

“Our country has secured *to the common laborer*, as no other country has, the fruits of his inventions, and *richly* he has repaid the provision. (Chauncey Smith, p. 266.)

“The superiority of American manufactures over those of the old world, has induced the German authorities to devise measures to protect its industries against this *new and powerful competitor*. It is understood that one of the main reasons for the decline of German industry has been *the want of a useful and practical patent law*. This omission has now been supplied. The new German patent law, which has now been in existence since last July, is necessarily *formed after patent institutions in the United States*. (Alfred E. Lee, Consul-General at Frankfort on the Main.)

THE ENGLISH SYSTEM OF HIGH PERIODICAL FEES WORKS BADLY.

The Hon. J. M. Thatcher, U. S., delegate to the Patent Convention in Vienna, reports, in reference to the inadequacy of the English plan, with its high progressive fees, to prevent the issue of improper grants; remarks: “Under the English system, a patent is still regarded as a favor from the Crown and, in some sense, a monopoly in its nature. As might be expected, the English statute has always failed fully to recognize the rights of original inventors, and amply to provide for their protection. In the absence of any provision for an official examination, the only guarantee of novelty in the invention for which a patent is granted, is the oath of the applicant, who also swears that he has made an examination for the purpose of ascertaining the truth of his statements. The result is that *the same thing is often patented over and over again*; and a patent in England has no value until its validity has been established by litigation.”

In illustration of this state of things the writer may here say that, having some years ago to look over the British patents relating to a specific class of improvements, his associate in the work discovered no less than seven English patents, granted at

different periods, for one and the same identical device. And it by no means follows that any one of these patentees swore to an invention which he knew was not his own. On the contrary, it is certain that nearly all and probably all believed themselves the inventors of that which they sought to patent. There is a kind of infatuation which induces an inventor to believe that the creation of his thought, this child of his brain, had no prior existence. Even under our comparatively liberal fees, it is often almost impossible to persuade an inexperienced inventor that it is worth while to wait a week and expend a small fee to ascertain the patentable novelty of his device. Why should an applicant desire to incur the heavy present and prospective charges of a British patent, if he knew beforehand that his claim was worthless?

As to the exclusion of valuable inventions by the high and periodical English fees, and also their utter inefficiency to prevent the issue of a swarm of worthless and conflicting grants—all competent testimony is unanimous and conclusive.

Thus, Edward Bally, the well known manufacturer, in his report, as Commissioner from Switzerland, to the Centennial Exhibition, said: "Many European States have also a patent system, but as they see in it, first of all, a source of revenue to the State, *those of moderate fortune can hardly obtain a patent.*"

Mr. Hulse, the Commissioner from Great Britain, said: "Judged by its results in benefiting the public, both by stimulating inventors and by giving a perseveringly practical turn to their labors, *the American patent law must be admitted to be the most successful.*

* * * I asked one inventor of a very good invention, 'Why do you not patent in England?' He answered: '*The conditions in England are too onerous!*' meaning, no doubt, that *the cost of a patent in England is too great*, and the time for which it is granted too short." * * * "England," said Mr. Hulse, "undoubtedly loses much of the benefit which might be had from the inventiveness of Englishmen, through the want, in English patent law, of encouragement and protection to inventors unsupported by capitalists." (Correspondence of State Department, 1877.)

In regard to the exclusion of inventions of high intrinsic value, and their consequent secret use and final loss to the world, owing to the onerous conditions of the English fees,

Mr. John Farey gives a number of striking illustrations, thus: James Watt contrived a machine for producing *fac similes* of sculptures to any desired scale; and showed Mr. Farey a number of beautiful specimens of the work, in ivory and alabaster, and made him a present of one carved by his machine. The secret was never disclosed, and Mr. Watt dying in 1819, the invention was lost. This was undoubtedly a forerunner of our Blanchard's lathe, for producing gun stocks and other irregular forms, and whose invention and publication—through being patented—has been the principal cause of American supremacy in the lucrative manufacture of small arms, which England thus lost through her grasping policy toward her men of genius. Those who choose to enquire may see in the testimony of this learned witness a wonderful list of inventions thus suppressed; the productions of such men as Dr. Wollaston, of Mathew Boulton, of Bramah, and such inventors of the first rank.

GERMINAL INVENTIONS.

The arguments before the House and Senate Committees of last Winter, abounded in superficial and specious conclusions; derogatory of the claims of the original projector, in favor of those more fortunate finishers of the edifice for which the first broke ground. With these gentlemen, it is not the man who first breaks up the immemorial waste; not he who first casts seed into the ground; not the pioneer, the cultivator, not the miller even, but only the *baker*, who alone, in their estimate, furnishes the community with an article "available for profitable use;" "an article practically able to work successfully."

These gentlemen would strangle invention in its cradle, because it cannot do the work of a man.

In reverting to the annals of those who blazed fresh tracks in the industrial progress of their race, and the too frequent ingratitude of some of the after comers and beneficiaries of their sacrifices; one is forcibly reminded of the aptness of William Howitt's reflections on his story of *The Old and the New Squatter*. "Theirs was the fate of the first heralds of human progress and of the whole victim race of discoverers, inventors and projectors, the advanced guard and the forlorn hope of the world's destiny. They labored, and others have entered into their labors, lay

claim to their honors, and put forward marvelous demands on the strength of their misfortunes. *Thy* poverty, poor Tom Scott, has worked the affluence of the sleek and prudent Davy McLeod. The racking of thy sinews and aching of thy bones have smoothed his pillow; thy pains are his pleasures; thy battles have produced his peace; thy watchings, his sleep; thy drenchings in the midnight frost, his dryness of lodging. On every pang and grief and care of thine, he has built his present heaven; and the last blast of desolation that laid prostrate in the burning ashes, all that the world held dear to thee, is the grand god-send to him, on which he boldly asks, that the rewards of his country shall be added to his already unweildy affluence.

BENEFITS OF INVENTION.

We have seen how much depends on invention, and how, under the fostering wing of the patent system, labor-saving improvements have, in the memory of living men, multiplied the means of production. That the brief monopoly accorded in what a man has a right to call his own, if to anything in this world, and the unprecedented activity in invention, and its handmaids—manufactures and commerce—stand as closely allied as cause and effect, as do almost any matters of admitted sequence, requires no occult power of mental ratiocination to perceive. The plain fact is, that every invention is a *venture*, involving, in most cases, much risk, labor, money-outlay, and sometimes a high order of scientific knowledge, close thought, and indomitable faith and persistence, and no sensible man would incur all this certain loss on an experiment which, without this guerdon, would be at the disposal of any adventurer.

For what is not humanity indebted to invention? To it he owes the possession of food, raiment, the arts of spoken, written and printed speech, and the means of flashing it around the world; to it he is indebted for his home, the garden, the orchard, music, painting, poetry, architecture, locomotion, all the treasures of thought in all the ages, the God-like in form and feature, the angelic in thought and deed. A vision and power of enjoyment, multiplied ten thousand fold, and reaching out from this tiny speck in time and space into the eternities of the past and the future.

RECAPITULATION.

The instances cited show conclusively that the presumption that every patentee is able to pay the proposed additional fee when due, when he so desires, is contrary to the fact

That it is not true that a neglect to pay the additional fee would necessarily prove that the patentee "does not deem it worth preserving."

That it is not true that every patentee has fully tested his invention so as to know whether it is pecuniarily valuable before the expiration of the first or even of the second proposed period of additional payment.

That it is not true, as implied in proponents' arguments, that the patentee is necessarily master of the situation, and can do as he pleases in promoting his invention.

That it is not true that the public, especially those who employ labor-saving improvements in their business, can eventually be benefitted by the proposed measures; and least of all, that later patentees can afford to set aside the interests of their predecessors.

That it is no less expedient than unjust to go back on the American system, which has, though not perfect, worked confessedly so much better than any other, and especially at a time when the best informed European publicists are urging their governments to follow our successful example.

That the instances cited and even the testimony of proponents abundantly show, that the system of periodical additional fees will not, as alleged, operate to weed out patents for worthless inventions, leaving alive only those which are valuable, but on the contrary will operate to vacate some of the most valuable, while it will leave alive some of the least so.

That patents for inventions of a fundamental character, in the hands of indigent patentees, which patents happen to contain a "feature" that a subsequent inventor "unconsciously uses," should not, as alleged by proponents, be put in jeopardy of their lives by the imposition of an additional tax upon such earlier patent.



That the grounds of the proposed legislation [Sec. 11], as stated by Mr. Storrow himself, are unworthy of consideration, because manifestly contradictory and illusive in their very terms, the declaration of object being first stated to be the relief of the record and of later operators from worthless patents, while the explanation of the *effect* implies an admission that the real animus and result of the section will be to "kill" valuable ones. [See page 156.]

That the system of periodical additional payments—besides constituting an unnecessary, unjust and impolitic tax on invention as such—would completely disorganize and embarrass the accustomed disposition of American patent-rights, both fractional and territorial, and be disastrous in its effects on American Invention.

That a proposition for a large increase of the already sufficiently onerous burdens of inventors, unaccompanied by any measures for their aid, betrays a spirit of hostility to a most useful class of citizens, which should receive no encouragement by the law-making power, if for no better reason, for the sufficient one that such a measure is unconstitutional, as manifestly not calculated to "promote" but to embarrass and retard "the progress of the useful arts;" to impair the rights of contract and recovery, and to destroy the exclusive element of the franchise which the constitution explicitly prescribes.

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